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RETRO* GAMER

ISSUE SIX

RETRO GAMER* ISSUE SIX
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06

>SYNTAX ERROR!

>MISSING COVERDISC?

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RETRO* GAMER

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INTERVIEWED:
ATARI'S NOLAN BUSHNELL, REVOLUTION'S TONY WARRINER AND DAVID DOAK OF FREE RADICAL DESIGN

RETRO GAMER*
006

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>10 PRINT "hello"
>20 GOTO 10
>RUN
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hello



Issue 6 already. It seems only yesterday since I started the first issue, down in the Live Publishing basement with no natural light, a box of candles and an old fashioned typewriter. How things have moved on since then. I've been promoted to the main office and even have a Spectrum with a thermal printer to work on. But seriously, how things have changed since the start of the year. I'm fully confident that issue 6 is our best yet, and looking at the upcoming features list, I'm convinced that Retro Gamer will get better and better, month on month. I'd love to fill you in on these future features, but I've been sworn to secrecy. I can give you a clue to one feature I'm particularly excited about however. Merthyr Tydfil FC is all I'm saying...

While I leave you to work that one out, I'm off to start work on the next issue (read: visiting seaside towns in search of classic arcades). As always, enjoy the magazine and the coverdisc, and I'll see you again next month.

MARTYN CARROLL
EDITOR

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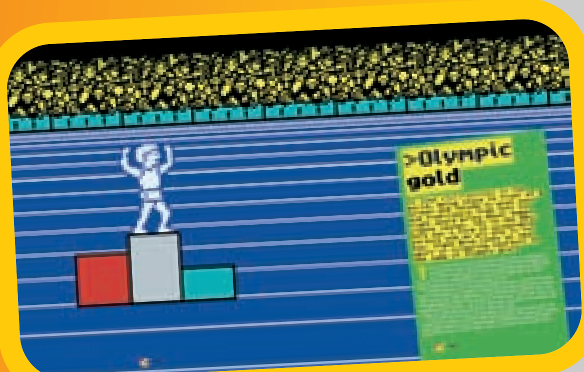
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JAGFEST UK


>Coin-op Conversions


>The Next Level


>Construct your own coin-op


>Olympic gold







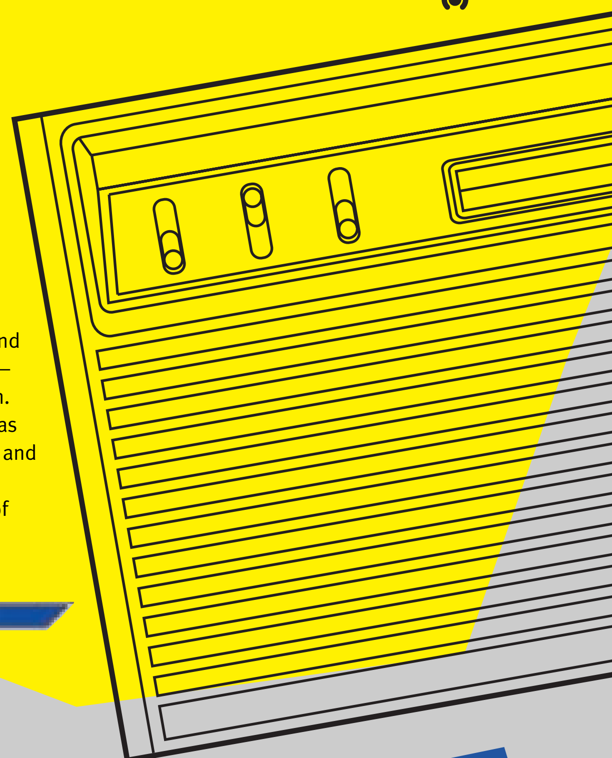




>Regulars

RETRO NEWS

The latest reports from the backward-looking world of retro



Feel The G-Force

Gradius flicks V-signs at other shoot-em-ups

The fifth game in the long-running Gradius series is about to blast its way onto the PlayStation 2. Published by Konami and developed by Treasure (talk about pedigree), Gradius V is shaping up to be one of the most spectacular space-based shooters ever. We were lucky enough to play the game recently and can report that it's shaping up to be nothing short of stunning.

Unlike the recent R-Type Final, which overcomplicated matters with dozens of ships and hundreds of weapons, Gradius V is unashamedly old skool. The power-up system has been expanded, but it'll be familiar to fans of the series, and the waves of alien craft are just as devious and as deadly as before. And of course, there are the huge end-of-level bosses. Obviously, the power of the PS2 hasn't gone to waste – just look at some of the backdrops – but Gradius V places the emphasis firmly on 2D shoot-em-up action.

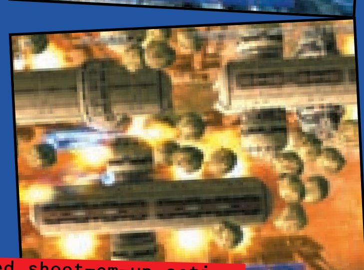
The original Gradius game first graced arcades in 1985 (it was released in Europe as Nemesis). This was followed by four sequels, several spin-offs (including the two-player Salamander and the spoof Parodius) and numerous imitations. Gradius V is the first game of the series that won't debut in the arcade, but its appearance on the PS2 should ensure it finds a wide audience. The game is due for release at the end of September, so there's plenty of time to sharpen up your shooting skills before it arrives.



GRADIUS V







The latest Gradius game features seven levels of frenzied shoot-em-up action

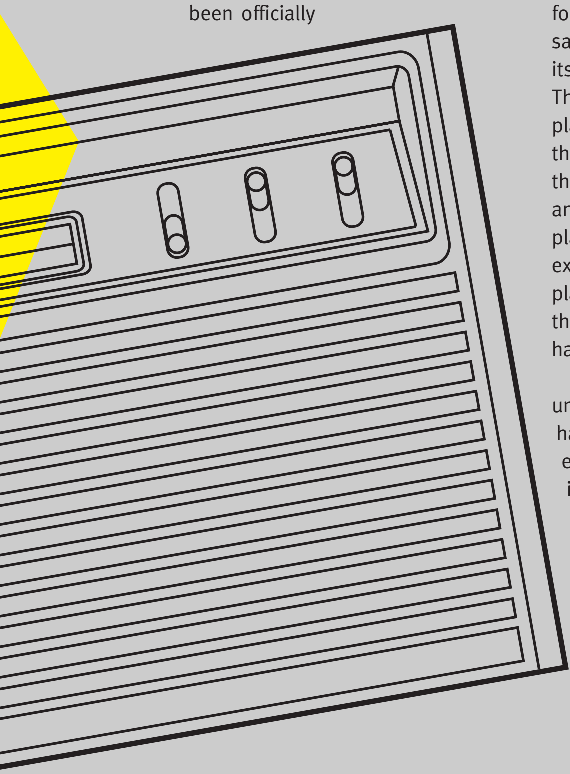
It's All Kicking Off Again

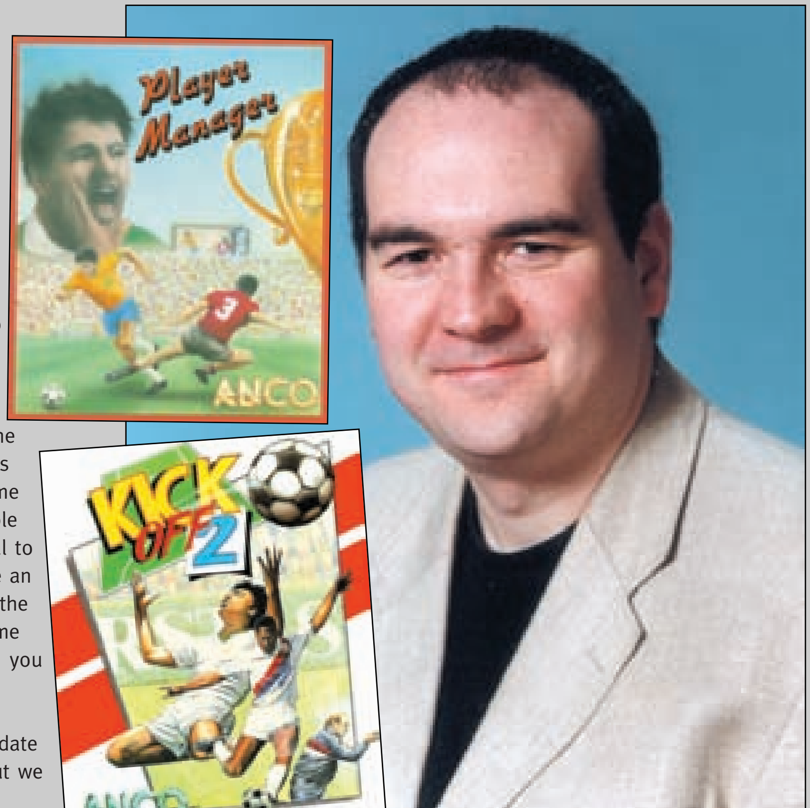
Dino Dini returns with new football title

After years on the sidelines, Kick Off creator Dino Dini is set to work on a brand-new football title. The ever-modest Dino has teamed up with sports game developer DC-Studios and the game will appear on PCs, home consoles and handhelds. We spoke to Dino in issue 4 and he admitted that he was working on a new footie game, but this is the first time his involvement has been officially confirmed.

Our only concern is that football games have evolved beyond all recognition since Dino scored big with Kick Off and Player Manager. But he's confident that the new title will force its way into the first team. "The current generation of football games has no focus on the player," says Dino. "The game itself is the spectacle. This is a problem. It is the player's experience that is the key to creating a game that is accessible, playable and has long-term appeal to players. If you can create an experience that satisfies the player each and every time they play the game, then you have created a classic."

The game is as yet untitled, and no release date has been announced, but we expect to hear more information as the new football season takes hold.

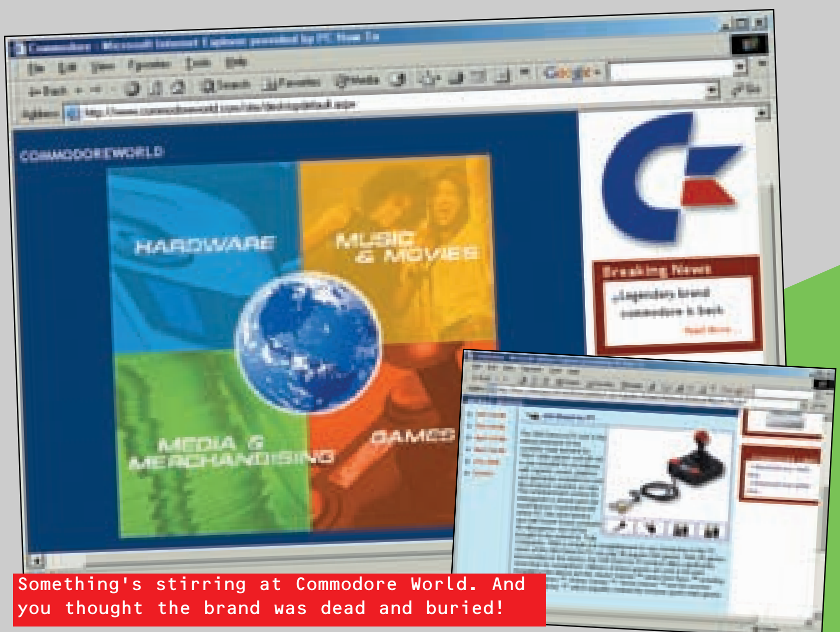




Dino Dini and the football games that made him a household name

Welcome To Commodore World!

Latest Commodore products revealed



Something's stirring at Commodore World. And you thought the brand was dead and buried!

The official Web portal for all Commodore-related items has finally been launched, rather hastily it would seem. Visit **www.commodoreworld.com** and you'll find information about the latest official Commodore products available from Tulip Computers in association with other companies, including Ironstone Partners, which will be handling the gaming side, and Yeahronimo NV, which will provide legal movie and music downloads.

More information about the C64 Direct-to-TV has also been announced. It will include 30 preinstalled games, be PAL and NTSC compatible, and will have a resolution of up to 320x240. Rumours about the device having an internal developer's port have been quashed, as Tulip state that the device won't initially support multiplayer functionality or game downloading. This has sparked rumours that future generations of the product will support these features, which would make sense since the Commodore World Web portal already offers legal game downloading – at cost, mind. The C64 Direct-to-TV will be available in October, in time for the beginning of the Christmas-shopping season.

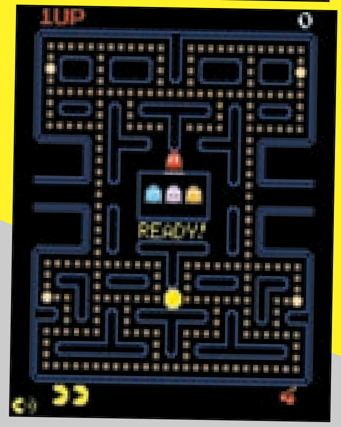
Pac On The Go

Pac-Man helps Namco clean up



At nearly 25 years of age, the ever-hungry Pac-Man is proving a popular download on Java-enabled mobile phones. The classic game was the number one download back in April, and has encouraged Namco to consider releasing a number of Pac-Man variants, including Ms Pac-Man, onto mobile platforms. These games will accompany existing titles such as Galaxian, Mr Driller, Galaga and Dig-Dug.





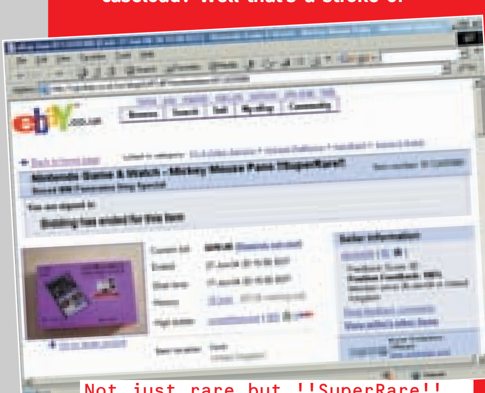
John McKenzie, sales and commercial director at Namco Mobile, explains why the concept behind Pac-Man still proves to be popular: “The technology that underpins mobile games is still relatively in its infancy and therefore most suitable for hosting less complex retro classics. With an infinite number of ways to complete the game and a timeless theme that appeals to players of all ages and sexes, Pac-Man is a concept that will run and run.”

Retro Auction Watch

There's a mixed bag of retro-gaming wonderment in the online auction world this month, ranging from a legendary Sinclair computer relic to a piece of silver plastic sheeting. Richard Burton takes a closer look

Nintendo Game & Watches always pull in high prices, particularly the early and variant releases, such as the Panorama Screen editions. The Mickey Mouse game falls into both of those categories and is reportedly one of the hardest to find, especially boxed. It’s no surprise then, that a boxed and complete example recently appeared on eBay UK and fetched an impressive £690 – or at least it would’ve done had the reserve price been met.

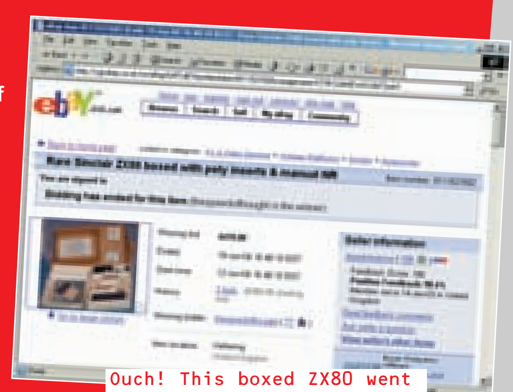
But what’s that you say? You only collect Game & Watches by the caseload? Well that’s a stroke of luck because over on eBay USA, one seller was auctioning three brand-new cases straight from the factory. Each case contained 10 unopened Game & Watches. One of the titles, Donkey Kong Hockey, went for the very respectable end price of US$500.



Not just rare but !!SuperRare!! And very possibly MINT IN A BOX!!

Fancy getting your hands on a retro dust cover? This strange little curio, made from silver vinyl, was created for the Vectrex console and came complete with a matching logo printed on the front. If ever an item was made for the completist collector, this has to be it. Rare? Possibly. Retro gaming? Definitely. US$300? Erm…

Alternatively, you might like to consider splashing out a mammoth £470 on an elusive Sinclair ZX80. Normally this would set you back around £150-200, so why the huge price mark-up? Apparently this one went for triple the going rate because it came complete with the original polystyrene inserts, as well as the manual and power supply. No doubt the seller of another ZX80, which had the overly ambitious starting price of £750, had seen the other ZX80 sell and wanted to grab some of the action for themselves. Rather predictably, the auction ended without the slightest sniff of a bid.



Ouch! This boxed ZX80 went for nearly £500

So there’s your retro-collecting tip for the future – never, ever, throw your packaging inserts away. One day they may be worth more than your actual system. Probably.

Plug 'N' Play

The TV Game offensive continues unabated

Another month, another batch of TV game consoles vie for the contents of your wallet. Radica UK is to release two new devices based around Space Invaders and Tetris. The Space Invaders handheld isn't as dull as it may at first sound, because unlike the recent console-based Space Invaders Anniversary, it doesn't just feature multiple variations of the classic original. Instead, you get Space Invaders and four other Taito arcade games: Phoenix, Colony 7, Qix and Lunar Rescue.

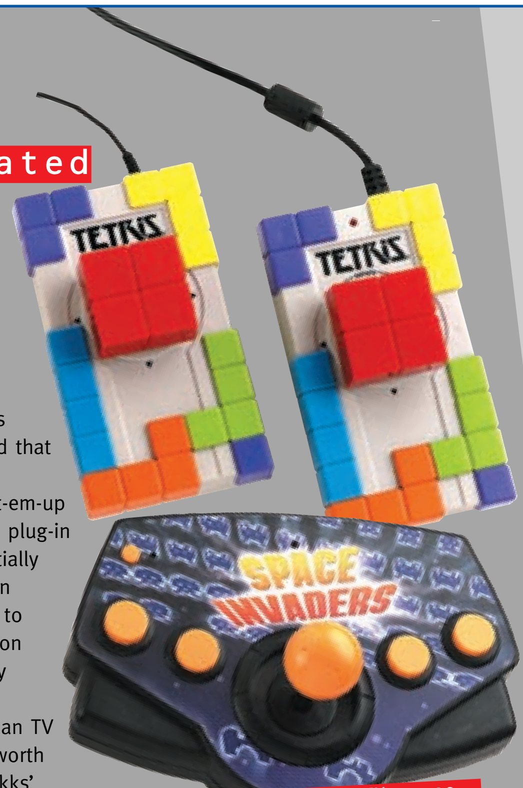
The Space Invaders console looks great too, with four arcade-style buttons. The same can't be said about the Tetris TV game, which is perhaps the oddest-looking thing we've seen in a long time. It's kind of unique though, in that there are two controllers for double the fun.

Besides standard Tetris, you get four variations: Battle, Garbage, Timed and Hotline. We don't have any further information on these variations at the moment, but we'd hazard a guess that they involve falling blocks and Russian music. It's just a guess mind...

The two devices join Radica's Arcade Legend's line, which also includes the mini Megadrive that we revealed last month. Since then we've learnt that the five built-in Megadrive games are Sonic the Hedgehog, Golden Axe, Altered Beast, Flicky, Kid Chameleon and Dr Robotnik's Mean Bean Machine. Not a bad selection by any means. The Megadrive handheld will set you back £29.99, while the other two are going for £24.99, and all three should be on sale now. For further details on Radica and its complete product range, please visit **www.radicauk.com**.

Jakks is back

In related news, Jakks Pacific has announced that it'll be cramming the infamous arcade beat-em-up Mortal Kombat into a plug-in joystick. Although initially aimed at the American market, we're hoping to see this in the UK soon enough. The company also plans to launch Spider-Man and Batman TV games. It's certainly worth keeping an eye on Jakks' activities, so head over to its homepage at **www.jakkstvgames.com**.

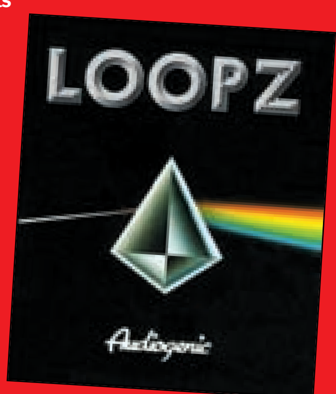


Just some of the TV games due out from Radica UK this year

Retro Round-up

Lynx goes Loopz

Carl Forhan of Songbird Productions has announced that Loopz will finally be making an appearance on the Atari Lynx. Songbird Productions recently acquired the rights to this game after several years of negotiations with Audiogenic Software and Hand Made Software. Loopz is a puzzle game fashioned around the Pipe Mania concept, although the object is to create loops of pipes. We're keeping an eye on this project, and if you want to do the same, bookmark www.songbird-productions.com. Whilst you're there, you might also be interested in the other games that Songbird has for sale for the Atari Lynx and Jaguar.



Metal Warrior trilogy

After the success of the limited edition Metal Warrior 4 Special Edition pack, CovertBitOps and Simon Quernhorst are bringing you the first three games in a limited edition numbered pack, which will include a pair of dog tags and an audio CD compilation taken from the games. Only 30 of the packs are available, on a strict first come, first served basis, and cost 40 euros each. For further information about Metal Warrior and Simon's Atari 2600 games, head over to www.quernhorst.de/atari.

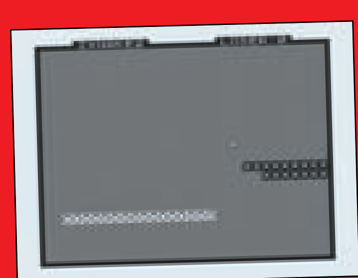
Egg Head on the Beeb

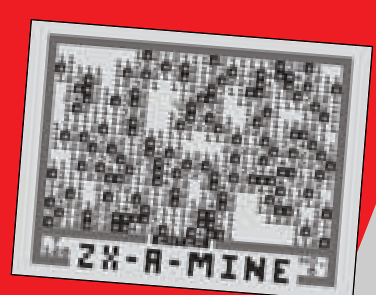
Jonathan Caudwell's popular Spectrum title Egg Head in Space is making its way onto the BBC Micro and Acorn Electron thanks to the skilled hands of Christopher Dewhurst. It stars the ever-lovable Egg Head, who has had three previous adventures in the binary world. At the moment, only a playable preview has been made available to us, but as soon as the game is ready, you'll find a full review in Retro Gamer. Head over to www.cronosoft.co.uk for the latest news.



Long live the ZX81

The prolific ZX81 programmer André Buchan has come up with yet more software for your 16Kb ZX81/Timex 1000. His two latest titles, found at www.zx-team.de/andre, are ZX-A-Mine and ZXNake2, and are Minesweeper and Tron light-cycle clones respectively. Once again, André has managed to work well within the limitations of the machine, and both titles are worthy of a look, especially if you have the ZX-Tape utility, which will allow you to load them onto a real ZX81.





The RETRO FORUM

Send us some mail ...>



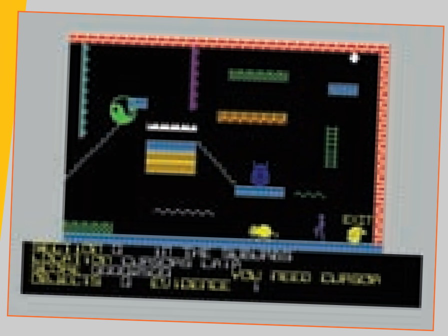
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Automan

Hi Martyn. Just dropping you a line to say that I'm loving the magazine so far. Thanks for bringing back so many memories! I really enjoyed the article in issue five on 80s' TV spin-off games (Airwolf really was a rock hard game!). However, I notice you mentioned the TV series Automan. I seem to recall the series fondly, although I struggle to remember the premise of the show, and also have a distant memory of owning the computer game on my trusty C64.



If memory serves it was a rather bizarre platform affair with some ropey driving elements thrown in. Since reading the article, I have scoured my collection but can't find the game. I can only conclude that I have either dreamt it all up or at some point many moons ago, lent it to a friend who promptly lost it/sold it/swapped it/fed it to their dog (delete as appropriate).

I was wondering if you would be able to shed a little light on this for me? Many thanks and keep up the good work – you're doing a fantastic job!

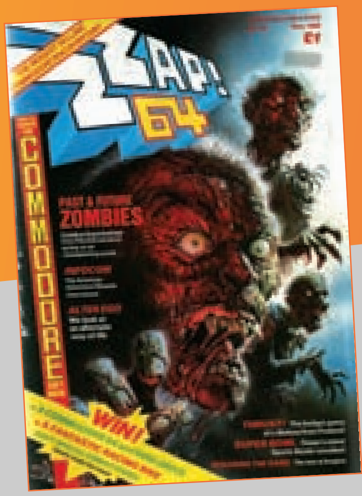
Andy Hill, via email

RG: Well Andy, take a look at the screen shot. We've managed to track down the Automan game, although it took us a few hours! You're right, it's a little odd, and we agree that Airwolf is rock hard. We much prefer the music to actually playing the game.

A thirty-something writes

Hi Martyn. Well, the usual formalities first. I must congratulate you and everyone involved on such an excellent and interesting magazine. You're doing a fine job of documenting the explosion of the retro computer and videogame scene that has been quietly bubbling away for a number of years. Retro Gamer is one of the only magazines that I eagerly look forward to getting my hands on each issue, and I can truly say I read from cover to cover. I admit that I haven't felt like this since the good old days when Zzap! 64 was in its prime. Sad, but true! Why am I writing? Not sure really, I guess I wanted to document my feelings on the retro scene, ponder the future of gaming, and possibly make a few suggestions.

Why is the retro scene so huge? Is it the nostalgia? Is because the thirty-somethings are reluctant not to let go of their youth? Or is it because we crave the simpler 'pick up and put down' type of game that we had in the days of the REAL Atari, Commodore, Amstrad et al? Whatever it is, I'm glad my kids have the opportunity to experience gaming the way I did, and can look at and be swept up in the rapid progression of this industry over such a short period of time. Perhaps they'll just think their



dad's crazy and living in the past.

Looking around my 'study' (I use that term loosely), there are numerous consoles and 8-bit computers in various states of working condition strewn from one wall to the other, cartridges for various systems stacked in piles, and other vaguely related computer and videogame paraphernalia tossed in. Is it a hobby or an addiction? In my case I think it's both. It makes me smile, it gives me pleasure, and my wife now understands that look I get in my eye when I spy a great find at a market or garage sale. These are feelings you really can't describe or put into words, but I'm sure that others out there know where I'm coming from.

Now a few comments – they're short but sweet. The retro beaten-up look for the magazine: I give two hands up for bringing it back. It had character, confused the news agency staff (making them apologise that the magazine was in such poor condition), and hell, who hasn't got an old cartridge box in a similar condition?! Issue three is too shiny and looks like those 'other' games magazines.

Now to the coverdiscs or, more accurately, the sleeves. They are great! Full marks for the design and subtle reflection back to cases from another era. The Sega version is excellent and I am looking forward to having a closer look at the Commodore version when it arrives. How about one done in the flavour of the tacky but cool Amstrad Amsoft label? Who could forget the classic cassette sleeves for Harrier Attack or Roland on the Ropes (or any other adventure starring Roland)? Roland could even be a feature on his own!

I'd also like to comment on the great interview with the Oliver Twins. It was interesting to read their perception of the programming scene back then. What talented guys they were too. Finally, what are the chances of catching up with the likes of Gary Penn or Julian Rignall for their views on the magazine scene during the 80s? The rivalry of Zzap! and Commodore User was similar to that of Crash and Sinclair User at the time, and provided many schoolyard arguments over which magazine was better. Kind of like the 'my C64 is better than your Spectrum is better than your Amstrad' debates that raged during those times too!

Keep up the great work and cheers for now.

Corey Mark, via email

RG: Thanks for the compliments. To take your points in order, we feel that the retro scene is taking off because the computers and games were so great in the first place. Of course, there was also a lot of rubbish back then, but could anyone honestly say that there isn't today? As for collecting old computer hardware, well, we know exactly how you feel, and it brings a smile to our faces when we find some 'old junk' at a jumble sale, which turns out to be something of great value. Some of the rare (and not so rare) hardware and software that has turned up in the office since Retro Gamers' launch has been great to see, and excellent if only for research purposes, although nostalgia does play a big part in it all.

Regarding the worn look, we're sorry but there are no plans to bring it back. It was very convincing though, and our design team is chuffed to bits with your complimentary views on its work. As for tracking down writers from magazines of old, well, there is definitely a feature in there somewhere. Next month, meanwhile, we've got an interview with ex-Zzap! writer Gary Liddon.

Dragon data

Dear Martyn. Congratulations on yet another splendid issue. When I look through the contents of each magazine, I can't help but relive my youth and go back and play my favourite old games. My first computer was a Dragon 32 that my Nan bought me for Christmas back in the early 80s. It came with Pong and Space Invaders. I still have the system and the games, but unfortunately, the joysticks have long since departed this world. In the near future, would it possible to see a history of the Dragon featuring some of the games that came with it?

The SID article was great, but one game was missing from the list: the Platoon loading music on the quick loader and normal mode was brilliant. It was also the first Commodore 64 game that I ever played back in 1988, and came with the Hollywood collection box set.

Thank you for your time and I look forward to next month's magazine. Keep up the great work.

Michael Holland, via email

RG: A feature on Dragon Data is already on the cards, as many other readers have fond memories of the Dragon. We should get round to it before the year is out.



Retro body art

I meant to email after the first issue. I was so happy to accidentally stumble across a magazine that looked like it had been written just for me. I managed to miss issues two and three, but I found four at just the right time – the week before I bought it I'd been listening to a lot of C64 tunes and original SID tunes. It's good to finally have a copy of SidPlay2 and SidAmp as I couldn't find them myself.

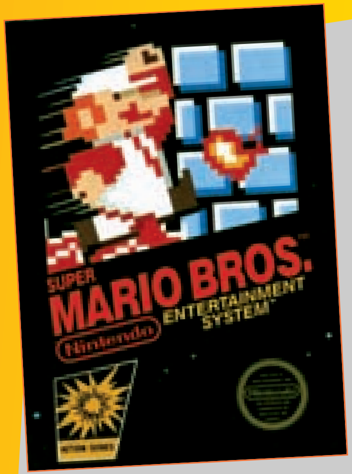
I'm upset that the fake wear and tear on the front cover of issue one has gone – I loved that! At least 'OLD!' in the corner is still there. I was wondering if there's any chance of reprinting some old game/machine ads as posters? I would love to collect some retro posters and I don't care if they weren't actually from 1984 or whenever. You print a lot in the magazine but I don't want to ruin my copies.

Also, how about a feature on people who have classic game symbol tattoos? Not just yet because I haven't got any myself – I have some ideas floating around though...

Thanks for a great magazine – glad it's going monthly.

Ryan, via email

RG: Another fan of the 'worn' cover. It looks like that idea split people for and against pretty much 50/50. Printing old adverts as posters – well it's an idea, if we can source some good-quality original posters to work with. One other idea we are toying with is having some original artwork as posters, or as illustrations to accompany features. As for the tattoo idea, we wonder if any readers already have retro gaming tattoos?



Mario explained

Regarding Chris Myatt's letter in issue five, I think I have an explanation for why one version of Super Mario Brothers on the NES may appear to be faster than another.

Although I wasn't aware of a slower NES version being in existence for UK machines, I had noticed that when I bought the GameBoy Color version of Super Mario Brothers, the music was quite a lot slower than the music on my NES version (which is the one paired with Duck Hunt). I thought this was just the GBC version, but when I played the US version of Super Mario Brothers on an emulator, it also had the slower music. I can't say for sure whether or not my PAL NES version is actually a faster game than these other versions, because I don't have any of them on hand, but it's possible a slight modification could have been made to NES Super Mario Brothers in this country to quicken it up. Presumably if the music on US versions of the game was a bit slower, an initial PAL conversion would have been a further 20% slower, which would be quite slow. You would think a Mattel sticker suggests an earlier version. Now, generally speaking, it's quite a complicated matter to speed a game up once it's been converted to PAL, as it would involve manipulation of the game's workings to make things move faster (and by a non-integer factor), and I think it's unlikely that this would have been done. You could very easily change the speed the music plays at though. Most music programming on this kind of hardware is tied into the frame rate. Because it is usually possible to generate a regular 'interrupt' at the end of every single frame of the game, this is the preferred method of regulating the speed of the music. For example, it may be that every six or seven frames, the next unit of a musical pattern is played. Simply changing how many frames are waiting before updating the music's position would allow the music speed to be changed without the game's speed changing at all. Faster music could certainly give the impression that a game was running faster.

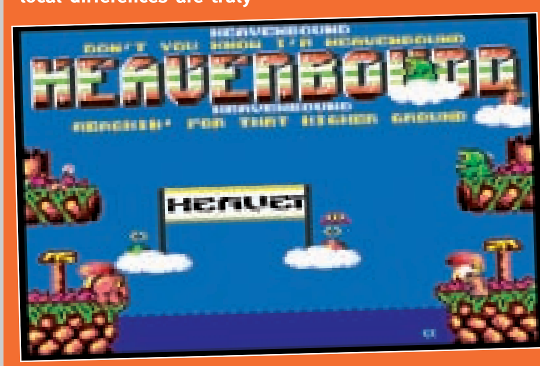
This explanation is entirely conjecture, but it is viable at least. I've one more thought to add: if it's true that the game is in fact twice as fast in some incarnations, one way this may be

Evolution

Hi Martyn. When I was five I played with colourful toy bricks. One year later the bricks were still colourful, but the material wasn't wood – instead they were made of ones and zeros thanks to my brother's VC-20! These bricks didn't always do what I told them to, but the fascination of this digital playground is still alive. Even in the middle of the Alps (some say you can find a country named Austria there!) I think it's time to point out that your outstanding magazine is well known in the German-speaking area. When you have a closer look at retro gaming, the local differences are truly fascinating. I wonder how wide these differences are between other countries? Some examples for you to consider...

In the field of home computers, the C64 was king without any doubt in Germany and Austria. Other machines were also popular, but none of them could rival the C64. Furthermore, I heard that in the UK cassettes were used as the main medium for games – is that true? I started to collect C64 games quite late – about 1993 – and back then every games was released on disk. Cassettes were the exception.

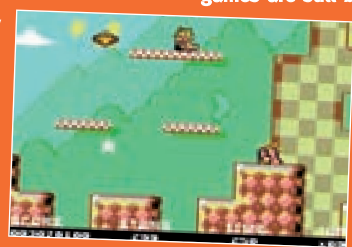
I find games likes Dizzy (I think the Game Gear version may have been released here) and Repton (never heard of that series – looks to me like Boulder Dash) very interesting as they're written from a UK perspective. If you have UK-specific games (and characters) then perhaps some popular German titles should be mentioned too. Especially when you look at the last years of the C64, there are some really nice products such as The Ormus Saga series (an Ultima clone) and two RPGs by a small company named AMOS. Even in Austria we had COSMOS Design – a group of coders that produced amazing platform games such as Heavenbound, and shoot-em-ups like Lions of the Universe. Are you familiar with any of these games?



In the issue 4 game music feature, I think you missed out one German genius. Chris Hülsbeck composed some great pieces, including the music for the whole Turrican series (how well known is that series in the UK?), R-Type (the C64 version), Tunnel B1 (PSone and Saturn) and Extreme Assault (PC).

Finally, I would like to suggest some potential topics for upcoming issues. Please highlight some more fan projects, like the great Beats of Rage for PS2, Xbox, PC and my favourite, the Dreamcast. This unofficial Streets of Rage sequel with SNK graphics is highly entertaining! I would also like to hear more about the Creatures series (Creatures, Creatures II and the graphically outstanding Mayhem in Monsterland) on the C64, and the two British brothers behind the games. And of course there are new games that are retro, like Viewtiful Joe. I think retro isn't just about the visuals – it's about the feeling.

Forgive me for my focus on the C64 (well, I do love my baby!) and please ignore my mistakes. Greetings from Austria and keep up the good work!
Klemens "Mav" Franz, via email



RG: Thanks for the feedback and suggestions. For those who might not know, the VC-20 Klemens refers to is, of course, the VIC-20. Commodore changed the name because Vic (if pronounced correctly) sounds like Fick, which is German for 'fuck'!

If you look on the German eBay site, it's clear how popular the Commodore 64 and 128 were during the 80s and 90s. It's little wonder that there's still a big C64 scene in Germany, and games are still being developed for the machine. Sadly, the C64's main storage format here in the UK was indeed tape. This actually prevented some disk-based games from being released here, such as Gauntlet III and Sword of Honour.

We're well aware of COSMOS Designs, and Heavenbound and Lions of the Universe are two of Shaun's favourite titles, alongside the unforgettable Fred's Back series. Thanks also for your suggestions. The Creatures series, along with Cyberdyne Warrior and Retrograde, was developed by Steve and John Rowland, known as the Apex brothers. They'd certainly be worth tracking down...

possible is by twice running all the code the game would normally run once per frame, before updating the screen graphics. This would actually be easier to program than speeding up the game the way I mentioned previously, but I doubt this is the case, since this would effectively require twice as much processing to be done every frame.
Joe Dixon, via email

RG: Thanks for that explanation Joe. It certainly shreds a little light on the matter. Unless anyone out there knows different.

Final Fantasy VII

Hi Martyn. So Final Fantasy VII is the best game ever? While, as you said, it's the best in a series that's always been quality, it's far from being the pinnacle of gaming. Even after years of deliberation I couldn't commit myself to naming one game as the 'best ever', but I can easily think of dozens of games on dozens of platforms that exceed it.



This raises the question of how a full Retro Gamer poll would turn out. It seems to me that the European gaming environment is probably a lot more balanced and complete than either the US or the Far East, since we consume massive numbers of games from West and East, yet we also have our own gaming heritage, mainly through the 8- and 16-bit micros of the 80s and 90s, which didn't have the same impact in the US or Japan.



Britain and France in particular have produced some of the best games ever made, but these go largely unrecognised in America and Japan. An example of this is the recent flop of Ubisoft's Beyond Good and Evil, which was nothing short of criminal. In short, it's lamentable and puzzling that FFVII should have found itself in such an exalted position when there are so many other more deserving games out there. But for me, it just serves as a reminder of how privileged we are here in the UK to enjoy such a rich and diverse range of games. As always, thanks for the magazine and keep up the great work.
Chris Dempsey, via email

RG: Good to hear from you again Chris. We agree with you regarding Final Fantasy VII, but not everyone does…

Final Fantasy VII (part 2)

Hello Martyn. First off, thanks for the great coverdiscs worth putting in your CD-ROM drive! I loved the GameBase 64 with issue five.

Anyway, I'm responding to an article in your news section about Final Fantasy VII and how it got voted the greatest game ever. Well, I think it's about time this great game gets the title it deserves. The game is sheer genius and will never be matched in RPG terms. The characters are great and the storyline is superb, plus it's got great length too and you don't put it down 'til you've finished it. All in all, it's the best game in its genre and, for me, it's just ahead of Super Mario Kart as the best game overall. As for new thoughts for the magazine, maybe some sort of world records page for racing or sports simulators. I know people will be shocked at some of the WR on Mario Kart! Keep up the great work!
Chris Clark, via email

Final Fantasy VII (part 3)

Dear Retro Gamer. You wanted to know people's thoughts on Final Fantasy VII being the best game ever so here are mine. I'm am a huge Final Fantasy fan and see the best in all the games, so I would struggle to select my favourite in the series. But when I think about FFVII, the memories return – the death of Aeris, Sephiroth walking through the flames, and the long hours I spent playing it in between revising for my exams. So what if Channel 4 rounded up 'The 100 Greatest Video Games'? Would FFVII take the top spot, or knowing Channel 4 and its target audience, would Tomb Raider be voted best game?



I also have a request. I've have this lead (see picture) and I have no idea what it is used for. Could someone please explain it to me? One end fits into a printer port of a PC and the other fits into the NES controller port. I do not want to use it until I know what it does, otherwise I could blow my house up.
David Freeman, via email

RG: We can see that the Final Fantasy VII debate has already started. As for your mystery load, perhaps one of our readers can lend a helping hand.

International Soccer

Hello. I haven't written to a magazine editor in a long time – the last time was when I stated in an ex-magazine that the C64 was the best machine for games. A month later a programmer stated that it wasn't in all cases. I was quite disappointed to be told that.



Anyway, I noticed that in your review of football games in issue three, you omitted Commodore's International Football (and the almost direct rip-off, Emlyn Hughes's International Soccer). The former should be noted for being (I believe) the first game on the C64, and whilst aiming and shooting at a 45 degree angle to the goal always found the back of the net, it was quite an exciting game. Emlyn's game was even better, and whilst it didn't solve the 45-degree problem, it did come fairly close. Plus all the options in the menus were quite good fun to muck around with.

I was also wondering if, in some future magazine, you will be covering Imagine and the alleged dodgy dealings that took place and ensured its downfall. I would also be interested to know what happened to Interceptor Micros (Siren City).
Nicholas Kingsley, via email

RG: International Soccer was a great game, especially when played against a friend. It's amazing to think it was originally released in 1983. Thanks for pointing it out.

Retro gaming fixes

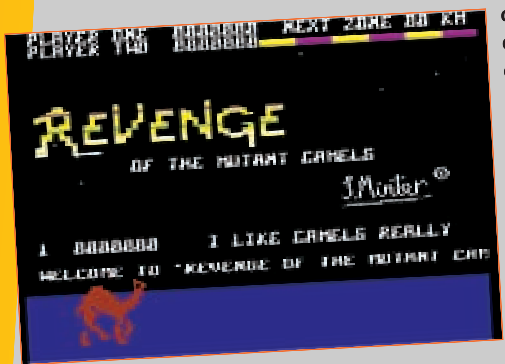
Hello to all at Retro Gamer. Now then, we all know that today's games look a million times better than their predecessors of yesteryear. Games are generally more complex, interactive and larger affairs than ever before. They continue to push the various platforms they're developed on to the limit. These days a console barely reaches two years old before the hype starts building for the next all-conquering super console ie PS3, Xbox 2 or N5. So, a question then: if we all seem to want bigger and better games, what is it that keeps us going back to the old days for our gaming fixes?

What about the burst of nostalgia you get when playing a game from 20 odd years ago. It's a bit like when you hear an old song. Forgotten memories suddenly come rushing



back into your mind and transport you to a place and time that you subconsciously relate the song to. Games from back in the day concentrated more on gameplay rather than fancy graphics, didn't they? They also often had a sense of the programmer's personality within them. This isn't something we see too often these days, due to the large development teams.

All in all I think it comes down to something very simple: a good game is a good game. No matter how old it is or how dated the graphics are, playability is everything. Admittedly, when you look back over the years there



have been some really poor games released, but that's still the case today. For every Rise of the Robots there's some licensed crap like The Incredible Hulk.

There's no denying that the retro gaming scene continues to increase. The amount of dedicated sites on the Internet is huge. We've got retro sections in most magazines now and, of course, the great new magazine that is Retro Gamer. It's good to see a magazine that isn't afraid to big up emulation. Personally, I think emulation is fantastic. It's been a major help in keeping games, computers and consoles alive that might otherwise have gone to the retro graveyard. Unfortunately, not all of us had the foresight to keep hold of all our old systems. Many of us probably had to sell one to upgrade to another. I often curse myself when I think of the collection I could have amassed since I started gaming in the late seventies. Hindsight is an annoying thing! We're all much wiser now though, eh? I'll never sell any of my stuff ever again!

Keep up the good work on the mag. I for one am hooked.

Bob Storey, via email

RG: We think you're right about the programmer's personality coming through in their games. Remember the famous Jeff Minter titles? Of course you do, because whether you thought they were any good or not, they reflected his personality really well, and more importantly his (in many ways) groundbreaking ideas. Unfortunately, with today's big budgets and multi-personnel teams it is difficult for any one personality to shine through, which is why we take such a keen interest in what the retro remake guys are doing. Sure, their productions can't be compared to their modern contemporaries in terms of cosmetics or scale, but they are the embodiment of the heady days of the 80s' bedroom programmer, creating for the most part good games worth playing.

Another important part of the retro scene, as you quite rightly point out, is emulation. There are many platforms that would be all but distant memories if it wasn't for the dedicated work of emulator authors.

Making sweet music

Hiya Martyn. So, I finally decided to get off my rear-end and mail you guys! Fantastic mag – it provides something different to the usual review of the latest 4THz processor or the new 1GB ultra-fast graphics card.

Having heard the SID tunes on the CD last month, I was quite impressed. Well, I should be, having owned an Acorn Electron when I was younger. I was only used to single-bleep stuff, so even hearing Repton on the BBC in school would make me jealous. Up until then I'd hardly ever seen C64s, let alone got near to one long enough to hear it!

Over the years I have heard a little bit from the SID scene, but the CD gave me a real taste of it. I now have every reason to see why C64 owners were so smug! That box can sure produce some good sounds and I can see why it's still popular today.

However (and getting to the point), when are you going to look at the MOD scene? I missed MOD music files on the Amiga, but before the MP3 craze hit, this was the nearest I got to really good music on the PC. Granted, there were lots of different trackers and players, and some would work with this, but wouldn't work with that etc – it was all a bit fraught! But there were some good tunes produced, some really decent covers, and some utterly bizarre ones. I never amassed many, and once MP3s came around, I think the scene died for a lot of people. I don't know a massive amount about this, but I'm sure someone will take up the challenge!

Keep up the good work!

Mark, via email

RG: We'll certainly get around to covering the great Amiga, as it is both a retro and modern platform, and the community is a vocal minority in a sea full of PC users. When we do, of course, we'll be taking a look at the Amiga music scene. We remember with glee the trackers and rippers that were available at the time, which all tied in happily with the huge PD and demo scene. For a short while, Shaun even set up a PD group of sorts called The Wizards PD. His handle was the Games Warrior, although he doesn't like to admit it, and his favourite PD game was Drip (anyone remember that?). Those were the days…

Booty-ful

I've just been reading issue four of your superb publication. I loved the feature on Telecomsoft. I used to buy all of the Firebird games, as they were great value. I loved Viking Raiders and The Wild Bunch, and still play both games on an emulator on my mobile phone.

In fact, Firebird games were even better value than people often thought. Take the game Booty for example. If you loaded the game on the ZX Spectrum with a speech synthesizer plugged in, a completely different game would start. So that was two great games for £2.50! This, of course, led me to trying every Firebird game to see if it had the same effect, but sadly, it didn't.

Wayne Rockett, via email

RG: Well, this email prompted some investigation from our editor and guess what? You're right! Take a look at these screenshots. If anyone else has any such trivia about other games, please let us know.

Tower of Babel

Hello there! I'd like to start off by saying how much I enjoy Retro Gamer and that I'm flabbergasted at how much the first issues are selling for on eBay. Perhaps I should get a safe. I've recently taken out a subscription and having received my free 5-in-1 games joystick, I am now addicted to Bosconian.

Having read your article on Rain/Silver/Firebird, I was wondering what happened to Pete Cooke. After a jump to Microprose he seems to have all but disappeared.

My interest mainly lies in a rather obscure title of his that I loved to play on my old Amiga, called Tower of Babel. Sadly I have been unable to find a working emulator version of this game. I'd be interested to know if anyone else remembers Mr Cooke or Tower of Babel (or has even heard of Tower of Babel). Maybe your wily journalists could track him down for an article!

Andrew Williams, via email

RG: We are always interested in tracking down personalities from gaming's past, including Mr Cooke, so stay tuned as you never know. As for Tower of Babel, Shaun remembers the game for the Amiga, although he never played it. Are there any other Babel fans out there?

eMag

RETRO REVIEWS

From old games on new platforms to new games on old platforms. As long as it's retro you'll find it in our regular reviews section...

Do you disagree with our Hall of Fame or Hall of Shame reviews? Or can you think of any other really great or damned awful games that we should take a look at? Email reviews@retrogamer.net with your suggestions and we'll take it from there...

HALL OF FAME

Frantic Freddie

Publisher:	Commercial Data Systems Ltd
Original price:	£5.99
Format:	Commodore 64/128

Frantic Freddie may seem an unusual addition to our Hall of Fame, but there's a good reason for its entry. The first time I encountered this game was actually on the Amiga. A demo group had faithfully remade it for the A500 and released it into the public domain. This remake made such an impression on me that I sought out the original C64 game to see just how good it really was.

The first thing that greets you is the title-screen music. It's a rendition of Crazy Little Thing Called Love by Queen. The significance of the game's name then becomes clear – presumably the authors were big fans of mustachioed rock god Freddie Mercury. The opening screen is simple and fairly standard for the time of release (circa 1983), and the same can be said about the gameplay, which is set in a static screen filled with platforms, ladders, collectables and bonuses. Three monsters per level are out to stop you progressing through the game, and each ladder is double-sided – that's to say that you may only go up or down each side. This rule doesn't apply to the monsters in the game, and play can therefore prove tricky, as you may soon find yourself trapped when seeking out the next bonus.

Frantic Freddie is simplistic in its design, graphics and gameplay, which will be off putting to some, but give it chance and it proves to be seriously addictive. Where this game really shines is in its glorious soundtrack. There are over half a dozen tunes and jingles throughout the game, and although not all of them are original scores, they certainly keep you entertained. On Lemon64.com, several people have commented that these tunes were the reason they bought the game. And you'd have thought that C64 music didn't exist before Thing on a Spring, wouldn't you?

Frantic Freddie is simple yet very playable, and makes fine use of the SID chip. Standards set since its release back in 1984 make it look dated, but all I can say is try it out and you'll be pleasantly surprised. Now, I wonder if they ever made a game based around Brian May...

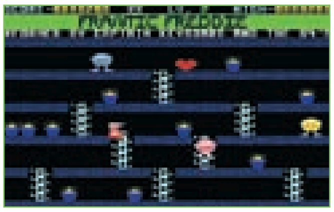
Shaun Bebbington

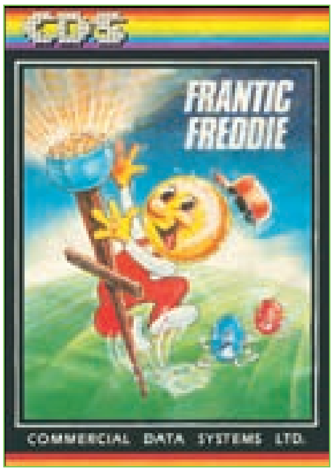
Graphics 70%
Colourful and simple, representing its era more than the graphical capabilities of the C64.

Sound 86%
Varied, bright and well thought out, although not all original scores. The title music will have you humming along – if you're a Queen fan that is.

Playability 88%
The play is fast, but occasionally there are elements of luck rather than skill.

Addictiveness 88%
The simple gameplay is compelling and easy to pick up.





Overall 83%
A frantic, fun-to-play platformer. Might be difficult to find these days, but worth keeping an eye out for.

INV+

Programmers: Erik Mooney & Piero Cavina
Price: Free download (or US$20 for cartridge version)
Format: Atari 2600

INV+ is a new homebrew game for the Atari 2600. It's based on the classic concept of Space Invaders, which I'm sure you've gathered from the screenshot. But why release a game for such a primitive format? Well, part of the fun is creating good games on a limited spec, and INV+ is a great example of putting this into practice.

INV+ is a mere 4Kb, and is the first (well, second if you count INV) Space Invaders clone on the 2600 to have 11 aliens per row, making a total of 55 on-screen craft – no easy task with such a small amount of memory. Needless to say there have been some compromises – the invaders are basically partially animated blocks, for example – although I'm happy to report that they haven't affected the gameplay. Your missile-launching craft, the bases and the customary mother ship are all nicely drawn, and the sound effects accompany the play well. The game can also handle two simultaneous players, so you and a mate can have great fun competing for the highest score. There's also an 'invisible' mode, in which you only see the invaders for a few seconds, when either one of them or your ship is destroyed.

As it is a current trend to mention the AI of the game, I should report that it is quite difficult to play at first (although it's easier with a good second player), so it'll prove a challenge for even the most avid Space Invaders fan. This game is well worth a look and can be bought on cartridge (although I suspect only die-hard 2600 fans will do this) or downloaded free (for use with an emulator) from **www.atariage.com**.

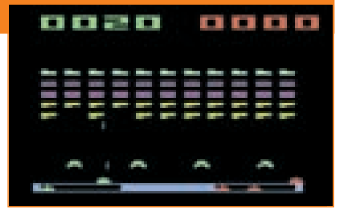
Shaun Bebbington

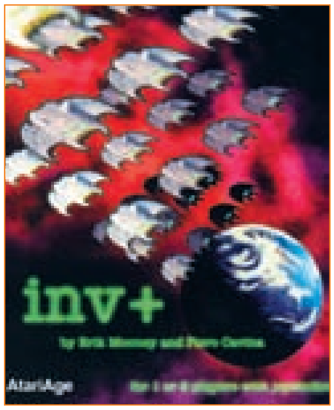
Graphics 79%
Nicely drawn bases and crafts, and lots of on-screen enemies despite the machine's obvious limitations.

Sound 80%
The in-game sound effects are of a high standard, especially the explosion effect.

Playability 80%
An instantly recognisable concept that will quickly have you hooked. Great to play with a mate too.

Addictiveness 80%
There are enough new gameplay additions to keep you interested.





Overall 78%
Like the original Space Invaders, simple yet extremely playable. Wiping out wave after wave of aliens is always fun.

Sonic Advance 3

Publisher: Sega
Price: £29.99
Format: GameBoy Advance

Sonic's new-fangled 3D adventures have received a pretty lukewarm reception, but when it comes to old-skool 2D platforming, the speedy ol' critter still has it. His latest incarnation on the GBA is a testament to this, and as soon as you fire it up, you know you're in for a roller coaster ride of whirling platforms, loop the loops, crazy boss fights and plenty of insanely fast moments.

Sonic Advance 3 once again pits Sonic against the robotic forces of the Eggman, and, as usual, it's the Chaos Emeralds that are at the heart of the problem. So, more ring collecting, enemy smashing and berating Tails for being totally useless are the order of the day.

Much like any other Sonic game, each level is intricately designed and all of them contain many different routes to the finish line. You have to make the most of various contraptions along the way (such as slingshots, see-saws and the like) and a few refugees from the 3D games (grinding rails, for example). Rather than following a set level-by-level approach however, Sonic Advance 3 uses a strange combination of levels and hubs, leaving you to mooch around the worlds as you see fit. This also includes a Chao garden (these are collected in the various zones).

Sonic Advance 3 is an enjoyable, fast platformer, and while the levels do tend to get very samey quite quickly, there's still plenty of fun to be had here. It's just a shame Sega can't quite recreate this winning formula in 3D.

Aaron Birch

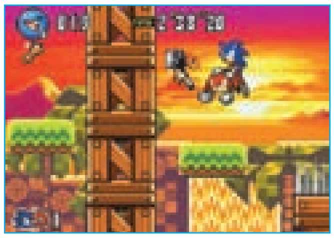
Graphics 90%
The graphics are bold, colourful and blast along at a blistering pace. There's Plenty of special-effects trickery and the animation is great.

Sound 77%
While the music may grate a little after a while, it is excellent quality and there's even some speech thrown in for good measure.

Playability 85%
Sonic has always had great playability, and this is no different. Fast and fluid play, great level design, and spot-on controls mean you're in for an enjoyable romp.

Addictiveness 68%
Possibly the weakest point. Levels do get samey and you probably won't play the game for prolonged bouts. You'll certainly keep coming back for more though.

Overall 80%
Sonic Advance 3 is a solid and enjoyable platformer that bears the classic Sonic spirit and plain old fun values. Cracking stuff.





Double Dragon

Publisher: Atlus
Price: £29.99
Format: GameBoy Advance

Double Dragon is widely acknowledged as one of the best beat-em-ups of yesteryear, an acknowledgment that I wholeheartedly agree with. The memories of spending all my pocket money down the local greasy spoon come flooding back. Pumping in 10ps while the usual contingent of mates and hangers-on watched as you pummeled the many deformed assailants into next week – fond memories indeed! So when I heard that the game was going to be resurrected on the GBA, well, I couldn't wait.

Sometimes however, memories can be lying gits, and Double Dragon is a prime example. DD on the GBA is a total recreation of the original arcade game and as such, bears all the ravages of time you'd expect. Although the graphics have been slightly tweaked, they suffer from painfully poor animation. This was acceptable back in 87, but it's just plain awful now. On top of this, the control system and amazingly sluggish character movement rob the game of any sort of appeal whatsoever. The enemies spend half of their time running around aimlessly, and the collision detection is childlike at best. Given that the GBA is capable of so much more, it's hard to overlook these technical gaffs.

The bottom line? The original DD was awesome back in the day, but looking back, I realise how poor the game was. Bringing it back fault for fault is a bad idea and it deserves to die a swift death.

Aaron Birch

Graphics 45%
The graphics themselves aren't too bad for the GBA, but the shoddy animation is just unforgivable.

Sound 58%
A mixed bag. The original music is brought back to life with nice results, but the SFX seem to have been lifted directly out of the original, meaning they're not very good.

Playability 30%
Oh dear. Although I admit the original was far from perfect in this department, the GBA seems to have robbed it of any form of playability whatsoever.

Addictiveness 35%
The original held me an iron grip, but this remake would be lucky to tempt me into paying the same price as a Fruit Salad for the privilege of owning it.

Overall 42%
I wanted to love this, but the cold hard reality is that it's just a poor game. In the past it was a giant, but now it's simply bad.





Double Dragon

Publisher: Melbourne House
Original price: £9.99 tape or £14.99 disk
Machine: Commodore 64/128

Arcade games must have presented many interesting challenges for those lumbered with the task of converting them to 8-bit formats. The home version would somehow have to be tailored to fit the host machine, playing to its technological strengths and using programming tricks where possible to create a better overall production. There are some superb arcade conversions for the C64 – Turbo OutRun and Ghouls 'n' Ghosts, for instance. Both are shining examples of how to do it well. Double Dragon, on the other hand, is perhaps the poorest of all arcade ports. And when you consider that the original was never a great game to begin with...

You (and a friend, if you want to double the pain) move left to right through the baddie-infested back streets of a rundown city, in search of the infamous Shadow Boss who's kidnapped your woman. But you're not totally helpless, as you have some cool moves and deadly weapons at your disposal. It all sounds fine and it would be if this port resembled the arcade original in any way. In reality, you do little more than deliver girly slaps to clones of yourself. The weapons don't resemble weapons at all and aren't particularly useful. Play is sluggish and the main sprites are split into two halves, with their upper bodies floating above your waist. You'll soon find yourself moving forward, tapping the fire button until the computer decides that your enemy is dead, then repeating this process until a jingle lets you know that the level is complete.

Double Dragon for the C64 is bugged to hell, badly presented and reeks of a rush job. If you were unlucky enough to buy this feeble effort when it first came out, then you know exactly where I'm coming from (and I'm guessing you took it back to the shop, claiming your Gran bought it for you by mistake). Avoid like a venereal disease.

Shaun Bebbington

Graphics 15%
Nice backdrops and reasonable scrolling, but awful glitches and no variety in the enemy sprites.

Sound 22%
A passable attempt at the title music and end-of-level jingle, but otherwise no thought has gone into the in-game sound effects.

Playability 7%
Move right, hit fire, then reset your machine. That about sums it up.





Addictiveness 8%
Experience the awfulness yourself, then switch it off. There's nothing more to see here.

Overall 13%
Double Dragon on the C64 is a perfect example of how not to covert an arcade game. Even without the licence it barely qualifies as a beat-em-up.

JAGFEST UK

>On The Prowl

The second weekend in June witnessed two important events: the launch of Euro 2004 and the second annual JagFest UK show. Retro Gamer passed up on the opportunity to watch England vs France, preferring instead to investigate JagFest. After all, Atari isn't a matter of life and death – it's much more important than that!

It all started in 2003, when a group of Atari Jaguar and Lynx enthusiasts looked across the pond and saw a vibrant Atari scene, which usually met once a year at the JagFest or at a JagFest sub-section of the US Classic Gaming Expo. With the commercial backing of 1632 Systems and many helping hands, Gary Taylor drew up plans for a UK equivalent of the JagFest. The imaginatively named JagFest UK was launched and the first event was an immediate success. It brought together many enthusiasts from around Europe, enabling them to show their wares, meet like-minded people, buy items for their collection, play games and drink plenty of beer.

Friday

The second JagFest UK was billed as a "festival of Atari featuring Jaguar, Lynx and ST, TT and Falcon." As with last year's event, it was held at the Medway Manor Hotel in Rochester, Kent. We travelled down and booked into a the hotel for the Friday evening before JagFest, and spent the rest of the day unloading gear and setting up stands ready for the slew of enthusiasts. As expected, the usual technical problems reared their ugly heads, which always seems to happen at retro shows and events. Phrases like "Well, it worked at home…" were heard at least 30 times during Friday evening alone.

After setting up, we decided to find a place to eat. There was a Thai restaurant close by and we all piled in. The rest of the evening was spent with great food and drink, and in good company. Conversations across the elongated table consisted of what people did for a living and how far they'd travelled. Much more interesting conversations concerned 68000 assembly language and, if you were desperate to discover the quantum physics behind the laser beam of a CD-ROM drive, Nick Bamji was on hand happily explain it to you in as much detail as you liked. Some of us mere mortals felt a little out of depth amongst such knowledgeable tech-heads, but talk happily moved on to games and a ritual slagging off of Microsoft's popular operating systems.

Once back at the hotel, the rooms were opened and a private 'warm up' party started, which went on until after 3am. Obviously, game-playing practice was needed for the upcoming tournaments, as well as a few more beverages.







Yet more pre-teen retro gamers

Saturday

We were all up early for a hearty breakfast. Even at this early stage, talk turned to the next JagFest, with plans already in place for September 2005. The stage was set for this year's event though, which promised to be bigger and better than before.

The event opened slightly earlier than planned and on entering, you were greeted with 1632 Systems' shop adjacent to the bar, which had many Jaguar and Atari items for sale. The room nearest to the bar was the designated games room, home to many Jaguars, Lynx and other



1632 Systems interview

While attending JagFest, we took the time to have a chat with Nick Harlow of 1632 Systems

Retro Gamer: When and how did 1632 Systems start out?

Nick Harlow: 1632 started life as a Public Domain library for the Atari ST, then grew into a business and a commercial shop. We attended most of the old shows in their heyday. Anybody remember the 16-Bit shows at Wembley? Or the Atari shows at the Motorcycle Museum? We were there… But all good things come to an end and finally, with the almighty PC's taking the lion share of the market, I started a shop. Then about four years ago, I started working for a living. The shop moved to a warehouse and then I closed that down and just kept 1632 as a retro Web shop.



RG: Was sponsoring the JagFest UK a natural thing for you to do? Has it helped the business side of things?

NH: Interesting question. I did try to involve a couple of other companies, but they didn't answer or weren't interested so in the end I took up the gauntlet. However, I must make it clear that whilst I wanted to do a show, the original impetus for the Jaguar show was Gary Taylor. I kind of moved it along somewhat. Has it helped business? Of course, but I do shows all over Europe and sometimes the States. They also help the business side of things.

RG: With regard to JagFest UK, did you seek help or advice from the JagFest USA organisers?

NH: Not really. I did have some help from Carl Forhan [well-known Atari fan and founder of Songbird Productions] with stock (excellent games, mate), but since I had some experience with attending shows I just put in what I wanted to see and do. The games events were organised by Gary Taylor and Nick Turner for the first show. The biggest pain was getting a hall or rooms at a reasonable price.

RG: Where did you get the idea to include a Commodore

consoles, including the Sega Dreamcast and the rare Nuon DVD player/console. The guys behind GameBase ST had set up stall here, with the promise of a similar project to the GameBase 64 front-end found on issue 5's coverdisc. Over on the other side (and purposely furthest away from the bar) was the computing room, where the people behind the online publication MyAtari.net had set up camp. Opposite them was the Cheshunt Computer Club, who supported the Atari ST, TT and Falcon machines. In the corner was an 8-bit Atari XE-GS using a Pentium-based laptop as a virtual disk drive. Also present was the Atari Portfolio Club, with many wares for sale, and as a sideshow – or as some put it, 'freak show' – Commodore Scene was in attendance with Allan Bairstow at its helm, promoting his activities and the C64 whilst trying to sort out the usual technical problems.

More people than expected arrived early on to have a look around, enter the competitions, buy items and chat to exhibitors. One or two people were surprised by the presence of Commodore, and many stopped to take a look out of curiosity. Several of the Cheshunt Computer Club's members were present, each using an upgraded or modified machine. Mark Branson from the group



Above: Nick Bamji, Tempest Champion
Below: Nick Bamji, Nick Harlow & Nick Turner



proved to be very helpful. He had an Atari Falcon housed in an ATX tower case, with a massive 512Mbs of memory and an accelerator card clocked at approximately 60Mhz. The group also presented us with some impressive demos created by those coders who refuse to accept that the machine's limitations are just that. Technical help or advice for the Atari ST/TT and Falcon range could be found here, as well as information on club membership.

The MyAtari.net team were beavering away, offering both enthusiasm and expertise. On their stand they displayed adverts that Atari had planned to use to promote the Jaguar and Lynx back in the day, and as the weekend progressed, the writers and photography team were busy putting together the next issue. This is where the aforementioned Atari XE-GS could be found with its slaved laptop. Once again, impressive scene demos were displayed with some explanations of the programming techniques used, and the odd game or two was played.

Sunday

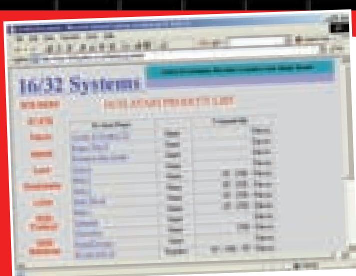
The game playing and computing carried on well into Sunday morning and, surprisingly, most of the attendees and exhibitors that had been burning the midnight oil were up bright and early. The doors were opened and most of the day was spent winding down. At around 1pm we loaded up the car, then said our goodbyes.

It was clear from the event that there's a lot to look out for in the Atari scene – emulator users and fans should keep an eye out for GameBase ST project, and there are rumours of new games for the Jaguar. With the wheels for next JagFest UK show already in motion, we're looking forward to more game-playing merriment. Hopefully we'll see you there too.





More Tempest and the GameBase ST stand



sideshow? Can you see the JagFest UK growing to include other formats as well?

NH: OK, I have a dark secret. I own an Amiga 4000, and whilst I don't use it as much as I want, it's a bloody superb machine. I have always liked the Amiga and would like to involve the company as well. The Commodore 8-bit... well, I grew up with a Spectrum and a Dragon but loved playing games on the C64 and VIC-20. After the Micro JagFest, which was held last November in Birmingham, I was impressed by the sheer loyalty some people have towards their older computers and thought we should involve other types as well in the JagFest.

RG: In general, is the Atari scene healthy or do you think the number of users is declining?

NH: Healthy? Well I won't earn a living from it just yet, but it is constantly in good health. Numbers declining? Not at the moment. People seem to want to relive their gaming past and some people collect for the sake of collecting. But, Atari ST/STE/TT/Falcons are still in everyday use and a vocal minority still want drive candy for their machines.

RG: Computers aside, what sort of future do you see for the Jaguar/Lynx scene?

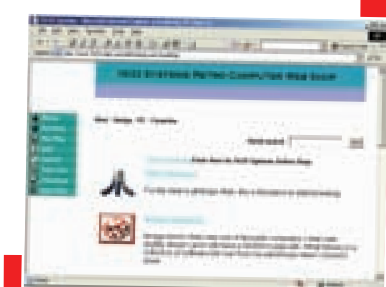
NH: With the recent advances in coding for the Jaguar and the CD encryption finally being broken, for the Jaguar I see a new future in homebrew games and prototypes. Whilst it will never be a mainline machine, there are a lot of people interested in coding for it. The Lynx is further down the line with new games and demos from people such as Duranik.

RG: What do you think makes users so loyal to the Atari machines?

NH: I think as Atari started it all and produced groundbreaking computers and consoles. Many people grew up with them. But when they use modern PCs and Macs they remember how much easier the older stuff was to use and how quickly you could get results. Even when they went wrong they still had a little style and soul.

RG: You've already started planning the next JagFest UK. Is there any way Retro Gamer readers can get involved?

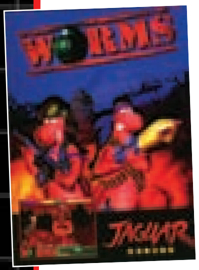
NH: Sure. The best way is to let me know what you want to see at the show. After all, it's there for you. Oh, and don't forget to visit my Web shop – you may want to buy something!



Tournament results

Four tournaments were planned for the weekend. However, Nexus Magazine, which was charged with running one of them, had to pull out of the JagFest at the last minute due to unforeseen difficulties. This left only three to compete in: Worms on the Jaguar, Tempest 3000 on the Nuon DVD player, and the Atari 7800 version of Asteroids. The adjudicators overseeing fair play were Stephen Moss, James 'thund3r' Perrow and Ryan 'Jagman' Edwards.

Worms tournament



The dozen entrants to Saturday's Worms tournament were split into four groups of three players, with the winner from each group progressing to the final. The groups were as follows:

Group 1: Shaun Bebbington, James Haslam and Richard Stevens.

Group 2: Ryan Edwards, Gary 'Gaztee' Taylor and Thorsten (aka 'Mad Butscher').

Group 3: Sacha Hofer, Shiuming Lai and Jan 'Coda' Thomas.

Group 4: Nick 'Stone' Bamji, Nick Harlow and Nick 'The Tyrant' Turner.

Richard Stevens, Ryan Edwards, Jan Thomas and Nick Bamji all won their respective groups and progressed to the final. As Ryan won all the tournaments at the first JagFest UK, the other finalists were slightly apprehensive about playing against him. After a great final, the results were as follows. In fourth place was Jan Thomas, who won a copy of SpeedBall 2 for the Atari ST. Third place went to Ryan, who won a copy of Dragon's Lair for the Atari ST. A close second place was 'Stone', who won a White Men Can't Jump Jaguar game cartridge. And the winner was Richard Stevens, who won a Hoverstrike (Unconquered Lands) CD for the Jaguar and a JagBox insert.

Asteroids tournament

This tournament ran on Saturday and was a simple high-score event. Players had 10 minutes or until they died (whichever came first) in which to score as many points as possible. The 12 entrants were: Stephen Moss, Gary Taylor, Nico Hofer, Jan Thomas, Bryan Bosley, James 'Clock' Barret, Dennis Barret, Ryan Edwards, Thomas Wellicome, Stephen Poynter, James Haslam and Thornsten (aka 'Mad Butscher').



No prizes were awarded for this tournament, but the top three scorers were as follows:

1st: James Barret	19,840 points
2nd: Thorsten	19,760 points
3rd: Nico Hoffer	17,570 points

Tempest 3000 tournament



This tournament ran on the Sunday and really succeeded in bringing out some raw passion in players! There was a little controversy when Nick 'Stone' Bamji was allowed to restart his first-round attempt due to an accidental reset because of an alleged controller malfunction. The first round scores were as follows:

Pete Muller	380,553
Nick Bamji	206,887
Matt Bacon	194,232
Nick Turner	185,258
Nick Harlow	176,000
Richard Stevens	131,357
James Perrow	108,950
Gary Taylor	72,250
Allan Bairstow	51,550
Nico Hofer	48,600
Stephen Moss	24,950
Shaun Bebbington	13,000
Shiuming Lai	6,950
James Haslam	6,150
Thorsten	4,300
Sacha Hofer	950

After a gripping second round, the tournament was taken by Nick 'Stone' Bamji. He won a rather nice boxed Lynx II for his troubles. Second place went to Nick 'The Tyrant' Turner, who won a copy of Tempest 3000. In third place was the first-round winner Pete Muller, who won two Atari 2600 games. A single 2600 game was awarded to Matt Bacon who finished fourth.

Commodore Scene interview

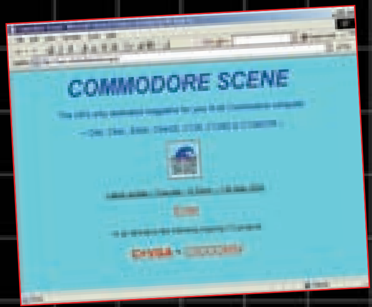
Allan Bairstow also attended the show, so we took a few minutes to speak to him about Commodore Scene magazine and the impending CS-Doom 64 – a version of Doom for the Commodore 64

Retro Gamer: How did you first get involved with the Commodore 64?

Allan Bairstow: Well, if we are talking specifically about the C64 then that would be the late 80s. I'm not too sure of the exact date. I was a bit of a late starter as I had to wait until I was working so that I could afford to buy my own computer. I paid £299 for the C64 alone – I had to go back a week later to buy the Datasette for £49.99. Prior to this, I used Commodore PETs in my final years at school and that would be about 1979. Either way, Commodore's are now in my blood and I am surrounded by them at Commodore Scene.

I never had any intention of writing a magazine. Along with many others, I was a reader of Computer Scene (Commodore Scene's original name) and I even started submitting GEOS articles. When Richard Bowen (the previous editor) had to stop producing it for family reasons, I asked if I could continue production until he was able to return. He didn't return and I am still here. The magazine goes from strength to strength, but it has to be said that the readership has dropped off a bit in these latter years.

RG: Which is the busiest part of running Commodore Scene: the magazine, importing service or the other on-going projects?



AB: It has to be the magazine. Everything is geared around producing Commodore Scene, and

everything that comes through the letter box or arrives via email is considered fair game for the magazine, so that takes quite a bit of sorting out. Although it has to be said that there are a few people who contribute regular articles and that makes my life a whole lot easier – I am eternally grateful to them for their dedication and help. The importing service runs fairly easily as goods come and go without too much trouble (if they arrive on time that is). The other projects (being the CS-Doom 64 challenge and the Commodore-to-VGA adaptor) are semi-self running, but I want to see them both complete this year.

RG: Which of the side projects has received the most interest from C64/128 enthusiasts?

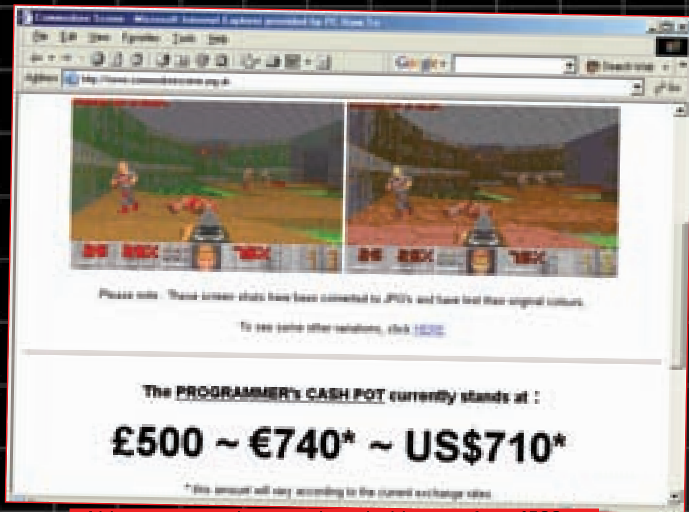
AB: The Commodore-to-VGA adaptor has really caught peoples' imagination, even to the point of them pre-ordering the units so that we can raise enough capital to finish the prototypes. The project should be finished this year without too much trouble, providing we can source the right testing equipment to get it done. The CS-Doom 64 challenge will be getting a kick from me during August, after this weekend and my family holiday. Along with the funds we have already and the new funds from donations, I hope to be able to entice a programmer to pull his finger out and produce something truly amazing.

RG: Regarding your Doom 64 challenge, do you expect to see a playable demo any time soon?

AB: At the moment the answer is no. However, I would like to see a demo of some sort before Christmas (hopefully). I will be setting aside the latter part of August and the whole of September to promote CS-Doom 64 and locate a programmer. We already have a musician doing the audio stuff, and we've been approached by a few people, but I'm not at liberty to say any more.

RG: What are your feelings on the 'old days' and the current scene?

AB: In the old days I didn't have any money and games cost nearly



Will anyone take up the challenge for £500?

£10 each. Today I have loads of hardware and software and the games cost next to nothing, so in that respect I am happier now. You can't really compare the two times as they are worlds apart. I enjoyed the heyday as I was young and all I had to worry about was where my next 10p was coming from for Space Invaders. I'm enjoying the revival we are having now and I have a wiser head on my shoulders, which means I can save some money so I can go to shows and enlighten the general public about what your C64 can do today, which is why I negotiated an area at the JagFest.

RG: Do you get many new subscribers to Commodore Scene?

AB: This year saw quite a few new subscribers, but the overall subscription base has dropped from last year. It's a sad fact of life that people just assume that CS will be here forever. It will if people subscribe and won't if they don't...

RG: Would there ever be a time when you would consider finishing Commodore Scene?

AB: Financially I would have to stop producing CS if the subscriptions weren't there, but I would make sure there was *something* to replace it. On a personal level, my Commodores are now a part of me and they will never leave me. It's hard to explain to my wife but I'm sure all you collectors will understand. That is what being an enthusiast is all about.

RG: How can Retro Gamer readers get involved?

AB: Well, with CS I would say subscribe to keep it alive. I will send out a free single-issue sample to anybody who writes/emails as long as they say that they read about it here in Retro Gamer. The CS-Doom 64 project is now on the look out for a programmer and the only way I will be able to do that is to raise some more cash – donations/pre-orders are welcomed and I will keep a tab on anybody who sends in cash or items for auction. The Commodore-to-VGA adaptor is now just awaiting some special equipment so that final testing can be done. This is just a 'wait and see' situation, but there is good news as a prototype should be ready for the winter.

RG: Is there anything you would like to say to RG readers?

AB: There sure is. This year we have the good fortune of having a genuinely great magazine for us all to enjoy – I am of course referring to Retro Gamer. We need to make sure it stays with us so, as with Commodore Scene, we need to subscribe and keep it alive. If you have some spare cash afterwards, why not subscribe to Commodore Scene as well. I was very pleased to meet Martyn Carroll at last year's Micro Mart show at the NEC in Birmingham, and having now seen the final magazine and watched the changes made in such a short space of time, it is obvious to me that the staff are producing something truly great for us all. This is the start of something big. RG*

To contact Allan, send an email to commodorescene@btopenworld.com or head over to his homepage at www.commodorescene.org.uk.

Atari Web resources

Here are some essential links you may want to keep an eye on

www.myatari.net
The premier publication for all Atari-related matters. The entire MyAtari team UK attended this year's JagFest and will bring you the fullest report possible in their next issue

www.jagfest.org
The official JagFest portal containing message boards and news on future events

www.1632systems.co.uk
One of the main sponsors of the JagFest UK

http://jfhaslam.atari.org
James Haslam's homepage containing many links and interesting downloads

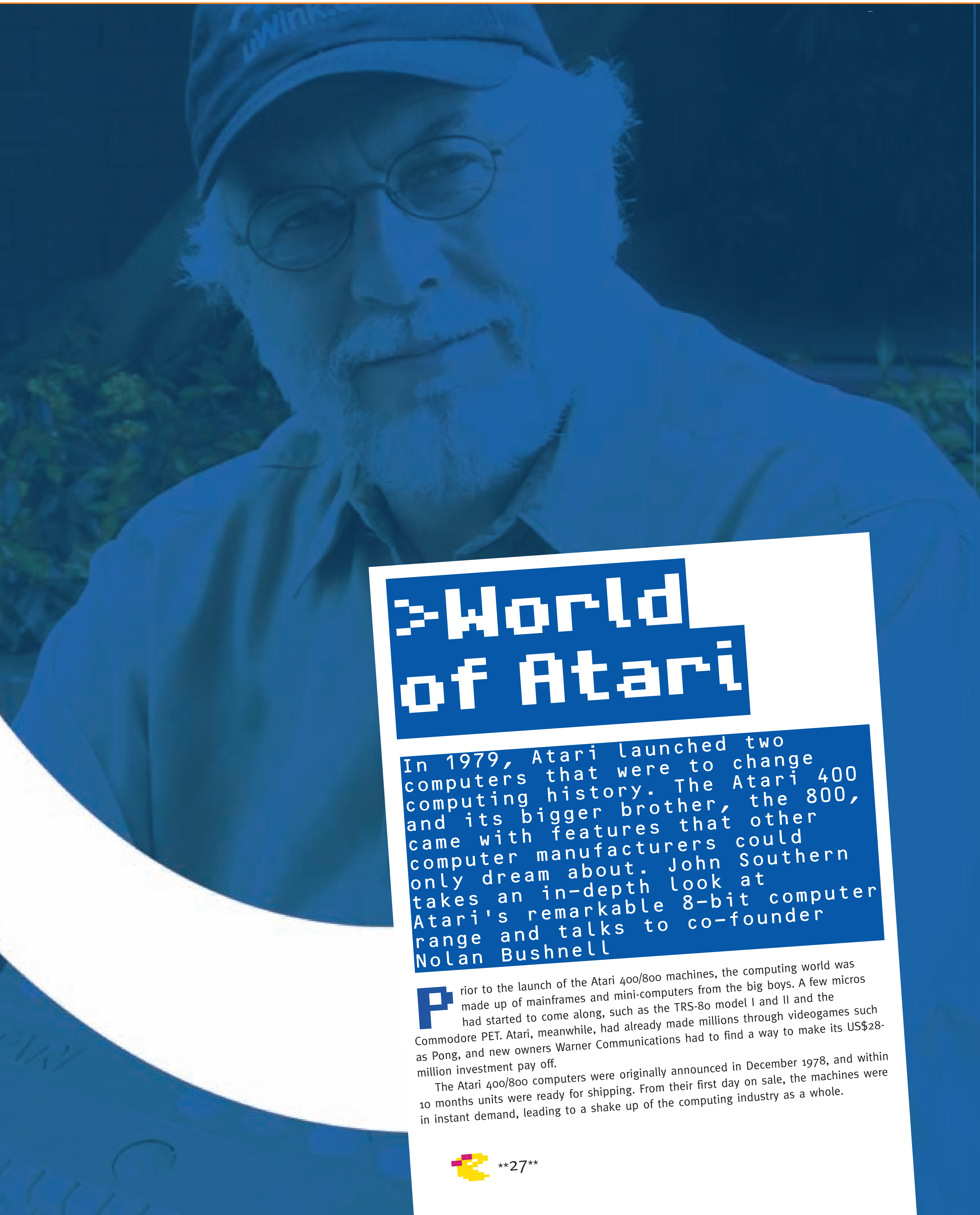
www.gamesbasest.com
Homepage of the GamesBase ST project

www.portfolioclub.cwc.net
Virtual home of the UK Atari Portfolio club

www.czuba-tech.com/accueil/english/welcome.htm
Information about Atari TT/Falcon and accelerator boards

http://hardware.atari.org
Loads of detailed Atari hardware information


ATARI



>World of Atari

In 1979, Atari launched two computers that were to change computing history. The Atari 400 and its bigger brother, the 800, came with features that other computer manufacturers could only dream about. John Southern takes an in-depth look at Atari's remarkable 8-bit computer range and talks to co-founder Nolan Bushnell

Prior to the launch of the Atari 400/800 machines, the computing world was made up of mainframes and mini-computers from the big boys. A few micros had started to come along, such as the TRS-80 model I and II and the Commodore PET. Atari, meanwhile, had already made millions through videogames such as Pong, and new owners Warner Communications had to find a way to make its US$28-million investment pay off.

The Atari 400/800 computers were originally announced in December 1978, and within 10 months units were ready for shipping. From their first day on sale, the machines were in instant demand, leading to a shake up of the computing industry as a whole.



Advertisements emphasised the power of the new 8-bit machines

The first Atari 8-bits may look primitive now, but back in 1979 when the home-computer market was still in its infancy, this technology trounced the competition. They may have been ugly, but beneath the bizarrely designed casing laid an impressive box of tricks.

The machines had colour graphics – 320 by 192 pixels could be coloured. OK, so there were only 16 actual colours, but the brightness of each colour could be varied to give 128 different shaded colours. The Sinclair ZX81, released two years later, still couldn't do this and was limited to black and white only. The machines also boasted four-voice sound, with a three and a half octave range. The sound was a little tinny and the volume control was almost useless, but this was the start of computer music, which finally ended with Atari TT's production of much of the 1980s' techno sounds.

During production, the 400 and 800 were codenamed 'Candy' and 'Colleen'. Rumour has it that Candy and Colleen where two secretaries working at Atari, and they were picked out because they had the biggest breasts. Who said computing is a highbrow pursuit?

The Atari 400

The 400 was Atari's first attempt at being more than just a console and video arcade company. Corners were cut on some parts of the design, but the machine still retained its edge. For an initial launch price of US$550, the most noticeably reduced feature was the keyboard. Atari used a membrane keyboard that did not have moving switch keys. Rather than suffering from cheap rubberised keys or slippery membranes as other manufacturers later did, the 400 had small raised ridges around each key. This meant you could feel where the key was and so type without looking at your fingers. Unfortunately, with virtually no vertical movement, it wasn't that easy in practice.



Of course not everyone was happy and plenty of peripheral manufacturers soon started offering typewriter keyboard replacements. (Many wonderful inventions were tried, including sticking rubber keys onto the membrane in the hope that the rubber would give some responsive movement.) On the right-hand side of the keyboard were four function keys – Select, Option, Start and, of course, Reset. Much later Atari would increase the number of function keys to five, with the inclusion of a Help key.

As well as allowing for a reduction in manufacturing costs, the membrane keyboard was designed in a way that meant it could be wiped clean after being used by children. This ties in with early adverts for the 400, which alluded to the fact that they could be family machines, mentioning quad-sized fonts for teaching children to read, and the usual clean-shaven, pristine-suited man displaying his family budget in a pie chart.

The groundbreaking development, though, was the use of the first custom-built Antic co-processor. Antic stood for Alpha-Numeric Television Interface Circuit, and it was used to control the TV display. It had its own instruction set and an application called the Display List, which handled writing data to RAM using Direct Memory Access and shunting the 6502C CPU. The 6502C was really a MOS Technologies' 6502B CPU with an extra HALT line developed for Atari.

The CTIA (Color Television Interface Adapter) chip was responsible for the graphics. As well as adding colours and dealing with collision detection, designer Jay Miner also incorporated Player/Missile Graphics (PMG) technology to the CTIA graphics chip, opening up endless gaming possibilities. By catering for the programmers, Atari ensured a steady supply of up-and-coming game developers that it could leverage for its arcade and console divisions.

On the I/O side of things, the joystick ports weren't just simple connectors – they could





also fire out data that could be used to control other devices, such as robot arms and phone diallers. There were expansion ports too, but these were internal and you had to take most of the machine to pieces to access them, as they lay under the metal R/F shields that made up part of the cartridge slot housing. Like so many early machines, you could use cassette tapes for storage and, naturally, Atari shipped its own tape player/recorder. Tape data transfer was slow, so the cartridge slots were used for important applications. The 400 only had one slot, which meant you had to choose between BASIC (as this wasn't supplied in the operating system), a game cartridge or extra RAM (interestingly, the cartridge slot was labelled 'left' even though there was only ever one.) For those who wanted to program the machine, the BASIC cartridge became the must-have buy.

Collectors of retro computers should look out for the 8Kb RAM versions of the 400 (as opposed to the later 16Kb models) as these were the first issues – unfortunately though, they're becoming very rare. Incidentally, the 400 name came from the original specification that called for just 4Kb of RAM.



The Atari 800

The more expensive 800 model came with 48Kb of RAM and had the advantage of a second cartridge port. This meant you could increase the RAM further and still have room for an application cartridge. The 800 also had more RAM on board. RAM was expensive in 1979 and prices fluctuated almost daily, so to have the extra 32Kb was a great bonus. Ultra-rare versions only had 8Kb on board, but were sold with a 32Kb RAM cartridge. The addition of a proper typewriter-style switch keyboard and RGB monitor output indicated that it was primarily aimed at the business man rather than the home gamer.

The 800 was the ultimate prize. It was expensive, selling in the UK for £400, almost double what it retailed for in America. (You could try importing one, but by the time you'd added postage and UK custom charges, you'd saved very little.) When units were shipped to the UK, most buyers realised that the UK computers could not compete on functions. Only the expense of the cartridge software stopped the Atari machines from killing the UK computer manufacturers dead in their tracks.

The computers were huge in the States. Atari's advertisers knew exactly where to hit the market. One advert showed a bookcase filled with software titles. At the top



>Add-ons & extras

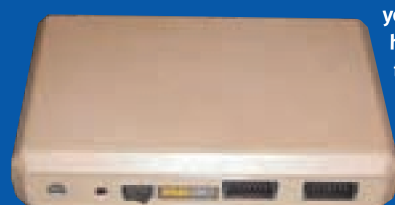
For those with a little more cash in their pockets and the need for a more useful machine, Atari offered the 810 disk unit. This was a single-sided, single-density 5.25in drive. Two versions were released: the usual flip-eject mechanism or the push-button type. The push-button version jolted the unit less, so the read/write head tended to last a little longer.



The 820 was Atari's dot-matrix printer, which had a five-pin head. The 822 was a thermal printer and had the added advantage that you didn't need the earplugs that really should have been supplied with the very noisy 820. The 825 was a professional eight-pin dot-matrix printer that was a little slower than the 820, but could use a wider range of paper stock.



Communication via computers was still in its infancy, but Atari had two modems. The 835 looked like any external modem, while the other 300 Baud modem was an acoustic coupler. This was a box with two rubber docking cups that you fitted your phone headset into. Due to the exorbitant price, it was cheaper to buy the 850 adaptor, which added parallel and serial ports, and a coupler from the RadioShack/Tandy range.



Thanks to their communication capabilities, the Atari computers soon became the preferred choice of machine to run Bulletin Board Systems (BBS). These acted as the forerunner to the Internet, and email of a sort existed, with BBSes passing accumulated messages on to each other to form large networks that spanned countries and continents. Echomail still runs today and many BBSes are in operation. They cater for specific groups and are still very cheap to operate.

Trackers and paddles

Input devices added glamour to the otherwise staid keyboard entry. The Trak-Ball had seen some success on Missile Command in the arcades, but sold in higher numbers than expected for Atari. This was due to the fact that the ball could be sent spinning with a simple flick of the wrist. In some games this proved to be an advantage, which is why you can still buy these devices for your PC some 25 years later.

Paddles (gamepads) have now merged and appear very similar. In the early days however, innovations abounded. Twisting potentiometers, sliding gauges and even paddles that sensed the human body's electromagnetic radiation found their way onto the market!

>Atari exports

Around the time of the XL launch, Atari started to cater for differing markets. When launched, the European PAL models had a monitor output alongside the usual TV connector, as opposed to the USA NTSC versions that had to rely on TV output only.

In Canada, Atari released a version of the 600XL with 64Kb of RAM built in (instead of the usual 16Kb). The 800XLF was released in France and was better still. This machine had a customised memory-management chip (Freddie) to give faster graphical memory switching. This was a SECAM version, but due to the cold war, Atari was prohibited from exporting to the world's largest SECAM market, Russia.

The Eastern European 800XE can be considered to be either a 65XE with an ECI port or a 64Kb version of the 130XE. The casing was similar to the XL range, but many older Atari users didn't like the repositioning of the cartridge slot at the back of the computer as this meant changing games was physically a little awkward. The machine also featured a white keyboard, which had a softer, spongier feel.



The Atari 1200XL and its successors, the 600XL and the 800XL

were all the financial and statistical packages, shouting out that the computer, although only a fraction of the cost of a business machine, was nevertheless capable of helping you become a business leader. Graph IT and Atari Word Processing held the prime positions. Below this lay educational and productivity software to appeal to a lighter yet still serious user, such as Touch Typing, My First Alphabet and Music Composer. The bottom of the bookcase showed a library of software written by other users. If they could do it, well why not you? Only in the middle did it target the younger audience. The shelf with the most titles was games.

Atari benefited from its coin-operated videogame market. Direct copies of games were sold as cartridges so you could play the same games at home. Cartridges prevented against piracy and maintained a high price. As the videogame market flourished, so did the cartridge range for the 400 and 800 machines. Other computer manufacturers had to write everything from scratch and slowly build up a back catalogue. Atari made the cut by ensuring every program was available in the arcades, on its consoles and then on its computers. If you were serious about games, then you bought an Atari.



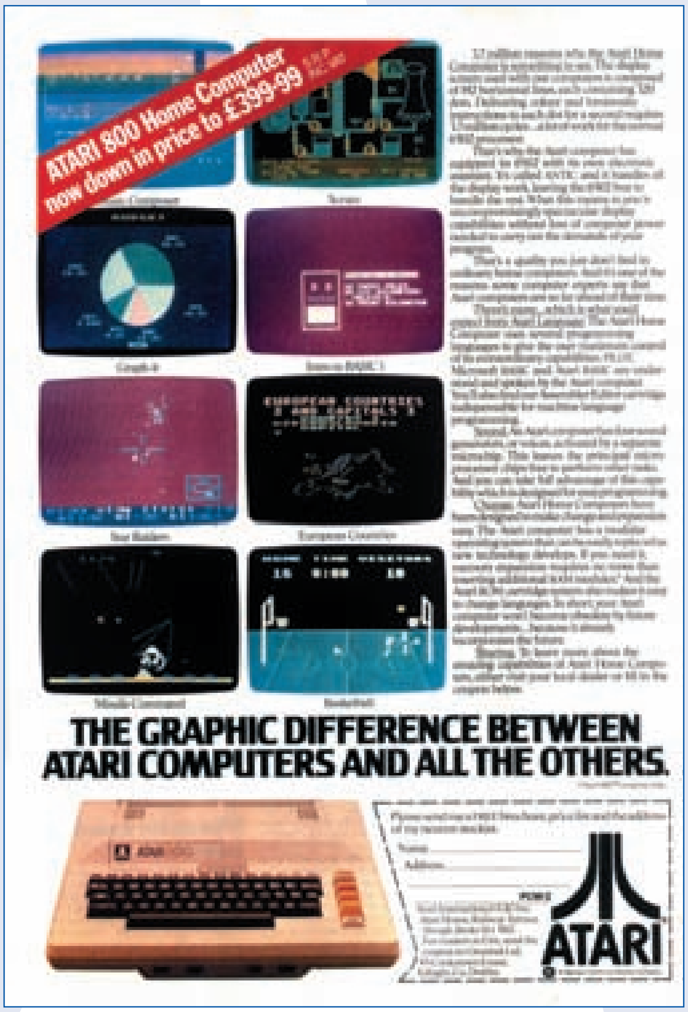
The Village People diggin' the Atari 800

The XL series

In 1982, Atari released its next generation of computers. The XL series became Atari's best-selling range, but it had a poor start. The first machine, the 1200XL, was released in the US only (making it something of a collector's item in other countries.) The 1200XL included the 6502C chip and 64Kb RAM, but unlike the 400 and 800 it only had two joystick ports instead of four. With a new 16Kb ROM and sound that now came through the TV rather than the system's built-in speaker, the computer gained a few followers.

Unfortunately, changing the operating system meant the back catalogue of software became redundant and Atari faced the challenge of having to port all of its software to the new machine. This meant the 1200XL started life as any other new machine, with very little happening on the software front. The model only managed four months in production before being deemed a commercial flop.

Having learnt quickly from this mistake, the subsequent 600XL and 800XL featured very few differences in the extended operating system and were almost fully backwards compatible with the original software catalogue. They included new 24Kb ROMs and the increase in size was due to their incorporation of the BASIC Interpreter on board,



meaning Atari could do away with a BASIC cartridge slot.

With the same customised chips – Pokey, Antic and CTIA (later upgraded to the GTIA – George's Television Interface Adapter) – the new machines were technically the same as the original models, although they did boast an additional Parallel Bus Interface (PBI). So basically, the 600XL/800XL were successors of the Atari 400/800 series and the unsuccessful Atari 1200XL, in a more compact case. They could use almost all the same software, just as long as the program was written correctly. Only a few titles would not run because of some slight variations between OS versions. The new 64Kb of RAM in the 800XL model also helped the game designers expand their range and complex adventure titles became popular.

With the new range came new printers and other peripherals. The 1020 was Atari's only colour printer. Manufactured by Alps, it used four pens to give a total of 256 colour combinations. The 1025 was a proper nine-pin printer that used spools of ribbon rather than the rising format of ribbon cartridges. Old, cheap stock from other printer manufacturers could often be used, keeping printing costs down.

The Commodore MPS-801 printer was rebranded and sold as the 1029 printer, while the 1027 printer plugged directly into the XL computers to give a very neat daisywheel-quality printer. The drawback of this model was that you had to manually feed in a sheet of paper at a time.

The 1050 disk drive came with the original Atari 400/800 operating system on a disk that could be loaded on top of the XL's OS to ensure compatibility with your old software. Memory could also be extended to over 300Kb and EPROMs could be fitted with DOS onto the motherboards.



The EX range shared the same casing style as the later ST line

The XE series

On 2 July 1984, Atari's Consumer Electronics Division, along with its Home Computer Division, was sold to Tramiel Technologies Limited. The holding company was quickly renamed Atari Corporation. This change in ownership brought about the death of the trusty XL line and gave rise to the XE series.

January 1985 saw the launch of the Atari 65XE and 130XE computers, to much press publicity. The 65XE, which was priced at US$120, was really a remake of the 800XL without the PBI. The 130XE, on the other hand, was to become the ultimate Atari 8-bit to reach mass production. With 128Kb of RAM, the Freddie chip and a re-engineered PBI called the Enhanced Cartridge Interface (ECI), it had the best of Atari 8-bit technology.

The peripherals improved too. The Atari SX-212 Modem finally made it beyond 300 Baud to an impressive 1200 Baud rate. And with the XF-551, disk drives also changed to double-density, double-sided units.

On the business side, many designs were tried by those who didn't want to advance down the IBM-compatible route. A hard disk with a whopping 10Mbs of storage was launched by Supra. High-resolution monitors and third-party 5.25in drives were common. You could even add CP/M via an additional Zilog Z80 chip unit from SWP. However, this was all just a holding strategy while the new Atari company killed the 8-bit line with the launch of the 16-bit Atari 520ST.

The final 8-bit from Atari was the XEGS (XE Game System). This was marketed as a console, but it was really a complete 8-bit computer. It featured 64Kb RAM and a detachable keyboard. Built into the 32Kb ROM was the BASIC interpreter and the Missile Command game.

Despite concentrating on the 16-bit range, Atari continued to manufacture the 8-bit machines for many years after the ST's launch. Finally, on 1 January 1992, production ceased and Atari's 8-bit computer line was discontinued.

>Prototypes



Most hardware manufacturers have a whole list of machines that never made it off the drawing board and Atari is no exception. The never-to-be-released 800XLD (an 800XL with a built-in 5.25in disk drive), 1400XL (a replacement for the 1200XL with built-in voice synthesiser and 300 baud modem) and 1450XLD (a 1400XL with built-in 5.25in disk drive and room for a second drive) were all in production around 1983, but perhaps the most famous example is the much-speculated 1600XL. This twin processor model was said to have the usual 6502C and the new Intel 80186 for greater DOS compatibility. However, in 1998 the Atari Museum claimed to have found engineering logbooks showing evidence of a 1650XLD (6502C based) and a 1850XLD (68000 CPU, 128Kb RAM with Apple compatibility). It is the latter that was probably the result of Atari licensing the Lorraine system from Amiga.

Other unreleased prototypes include the 65XEP (XE Portable), which was a portable 65XE housing a 5in green-screen monitor and 3.5in disk drive. Finally, the 65XEM (XE Music) was a version with an eight-voice 'Amy' sound chip designed to rival the Commodore 64's SID chip. Unfortunately, neither machine passed the prototype stages and both remained concept machines.



>Machine specs

Atari 400



Production	1979-1982
CPU	MOS Technology 6502 at 1.773447MHz (PAL version)
RAM	8Kb or 16Kb
ROM	10Kb
TEXT MODES	40x25
GRAPHIC MODES	320x192 (maximum)
COLOURS	CTIA 128 colours, GTIA 256 colours
SOUND	4 voices, 3.5 octaves
I/O PORTS	TV, 1 cartridge slot, expansion bus, Atari Serial I/O (SIO), 4 joystick sockets, tape recorder, 2 internal slots
OS	400/800 OS in ROM

Atari 800



Production	1979-1982
CPU	MOS Technology 6502 at 1.773447MHz (PAL version)
RAM	8Kb or 48Kb
ROM	10Kb
TEXT MODES	40x25
GRAPHIC MODES	320x192 (maximum)
COLOURS	CTIA 128 colours, GTIA 256 colours
SOUND	4 voices, 3.5 octaves
I/O PORTS	TV, RGB monitor, 2 cartridge slots, expansion bus, Atari Serial I/O (SIO), 4 joystick sockets, tape recorder, 4 internal slots
OS	400/800 OS in ROM

Atari 1200XL



Production	1982
CPU	MOS Technology 6502 at 1.7897725MHz (NTSC only)
RAM	64Kb
ROM	16Kb
TEXT MODES	40x24
GRAPHIC MODES	320x192 (maximum)
COLOURS	GTIA 256 colours
SOUND	4 voices, 3.5 octaves
I/O PORTS	TV, RGB monitor, 1 cartridge slot, peripheral connector, 2 joystick sockets
OS	XL OS in ROM

Atari 600XL/800XL



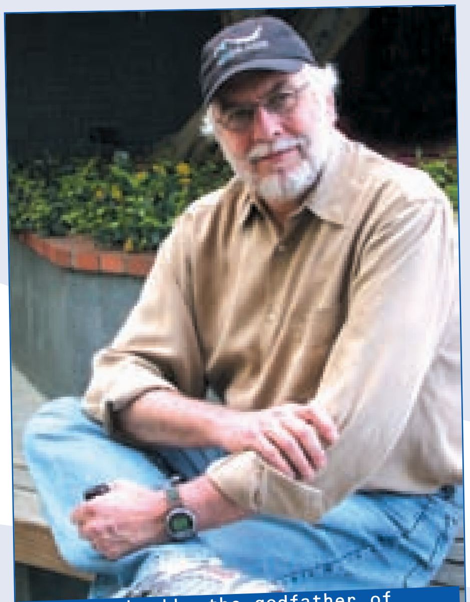
Production	1982-1985
CPU	MOS Technology 6502 at 1.773447MHz (PAL)
RAM	16Kb (600XL) or 64Kb (800XL)
ROM	24Kb
TEXT MODES	40x24
GRAPHIC MODES	320x192 (maximum)
COLOURS	GTIA 256 colours
SOUND	4 voices, 3.5 octaves
I/O PORTS	TV, RGB monitor, 1 cartridge slot, expansion bus, Atari Serial I/O (SIO), 2 joystick sockets, tape recorder, parallel bus
OS	XL OS in ROM with BASIC interpreter

Atari 65XE/130XE/XEGS



Production	1985-1992
CPU	MOS Technology 6502C at 1.773447MHz (PAL)
RAM	64Kb (65XE/XEGS) or 128Kb (130XE)
ROM	24Kb (65XE/130XE) or 32Kb (XEGS)
TEXT MODES	40x25
GRAPHIC MODES	320x192 (maximum)
COLOURS	GTIA 256 colours
SOUND	4 voices, 3.5 octaves
I/O PORTS	TV, RGB monitor, cartridge slot, expansion bus, Atari Serial I/O (SIO), 2 joystick sockets, tape recorder
OS	XL OS in ROM with BASIC interpreter (XEGS includes Missile Command)

>Nolan



Nolan Bushnell, the godfather of videogames

Retro Gamer: In the old days, a programmer could bang together a game in a back bedroom, but today entire development teams are involved and the market has changed completely. How do you see today's gaming industry – can a bloke with a vision for an original game still make it?

Nolan Bushnell: Absolutely. The nice thing about software is that you can throw teams of programmers at it, which is necessary for extremely extensive and complex world-type games, and most of the RPGs that you see in the online world require that. So it's a budget and a monetary issue. But many of the games that I believe will be successful are reminiscent of the early Dooms – they will be the product of one or two brilliant programmers. And I think that the massive multiplayer, in which you have to have an extremely small data-sparse kernel and ways to keep servers from being bound through transactions, they almost need to be non-corporate because the architecture that it screams out for is peer to peer. So if anyone reads this, I am interested in a game in which you essentially secure a structure in which every

Bushnell interview

Atari is over 30 years old and in that time the world of videogaming has changed beyond all recognition. Nolan Bushnell, Atari's co-founder, is back in the games market with a new company, uWink. We caught up with him and asked for his views on today's gaming industry...

participant becomes a server. You can then have multiple connections, adding and dropping sessions with the players that are in your environment.

Retro Gamer: Are people today too bothered about how a game looks rather than how it plays?

Nolan Bushnell: The reason that they are obsessed with that fluff is that we live in a media environment where you get a lot of jollies for how things look. In many cases people are more interested in the technology of gameplay than in the gameplay itself. And I really don't know why.

Retro Gamer: Online gaming is already massive on the PC and it's now taking its first tentative steps into the mainstream through stuff like Xbox Live and the PlayStation online malarkey. Is online gaming the wave of the future?

Nolan Bushnell: It's funny you mention that, as in 1975 we started a division of Atari called AtariTel. We actually had a working 22-kilobit modem in the lab. This in a world of 300 baud modems! So we were planning to have an online component that was based around bulletin board structures. We were going to use T1s to link local bulletin boards, to give an Internet-like structure. The IP infrastructure and protocol is just brilliant in its simplicity and extensibility. It was so much better than the system that we had envisioned at the time, even though we were very early. It can only be speculated whether or not we would have evolved an IP kind of structure ultimately, but we were definitely moving in the direction of a connected online community.

The console market has always been for the technical neophytes, and network connections have technically been somewhat difficult. It has only been through the application of tremendous amounts of resources that this has become easy to use. There were some very strong early attempts at this, such as Sierra Online, which was a gaming network that was launched in the mid-80s. There were some really good games that could be played. If you then look at the time before the Internet was essentially commercialised – some of the MUDs that were operating by Stanford Research and Xerox PARC – there were some really amazing things being done even in this early era. I think that it was more that the economics of simplicity slowed down the development of online gaming via consoles.

Retro Gamer: Currently, the gaming market is split between the consoles and the PC. Do you think one platform will ultimately dominate?

Nolan Bushnell: I think it's always going to be difficult for the consoles to overtake PCs just because in general, PCs have more money that can be thrown at them. There is also a certain cheat that is going on, in that the television screen has much less resolution than a good monitor; so with the consoles you don't have to manipulate so many pixels to have what, compared to television, is a pretty paltry graphic experience. And so a graphic card for the PC is going to move more pixels around, and give a more satisfying experience than a console.



Nolan with the custom Pong controller

A more interesting trend is this whole question of open systems versus closed. There is, at the moment, a great attempt to keep the console systems closed, so they can essentially subsidise the hardware with software sales. I believe that in the final analysis, even though there are some very compelling economics for keeping closed systems, I believe software and intellectual property in the long run always wants to be free or tends to want to be much more open.

I think there will continue to be this battle for the console market. But I really think that there will be a convergence of computers and TVs, where they become essentially one thing. My vision for the future is that in the corner of the house is a server. We then have a network of screens that we hang around the house. Some of these are at a desk where we have a keyboard; some of the screens are in the living room where we watch TV. Then we hang speakers around the house and play our MP3s. All this would be accessible through smart remote controls. Basically, these artificial distinctions that we now have disappear.

Retro Gamer: Loads of classic games are enjoying a new lease of life on mobile phones. Why do you think this is?

Nolan Bushnell: In the early days of computer gaming, graphics were technically very difficult, and so in some ways if you look at the micro screen on cell phones, one of the aspects of it is that it is relatively graphically sparse as well. So the fact that the early games had to be extremely well tuned and exciting as well as graphically sparse, means that a lot of the early games are perfectly suited to this new medium.

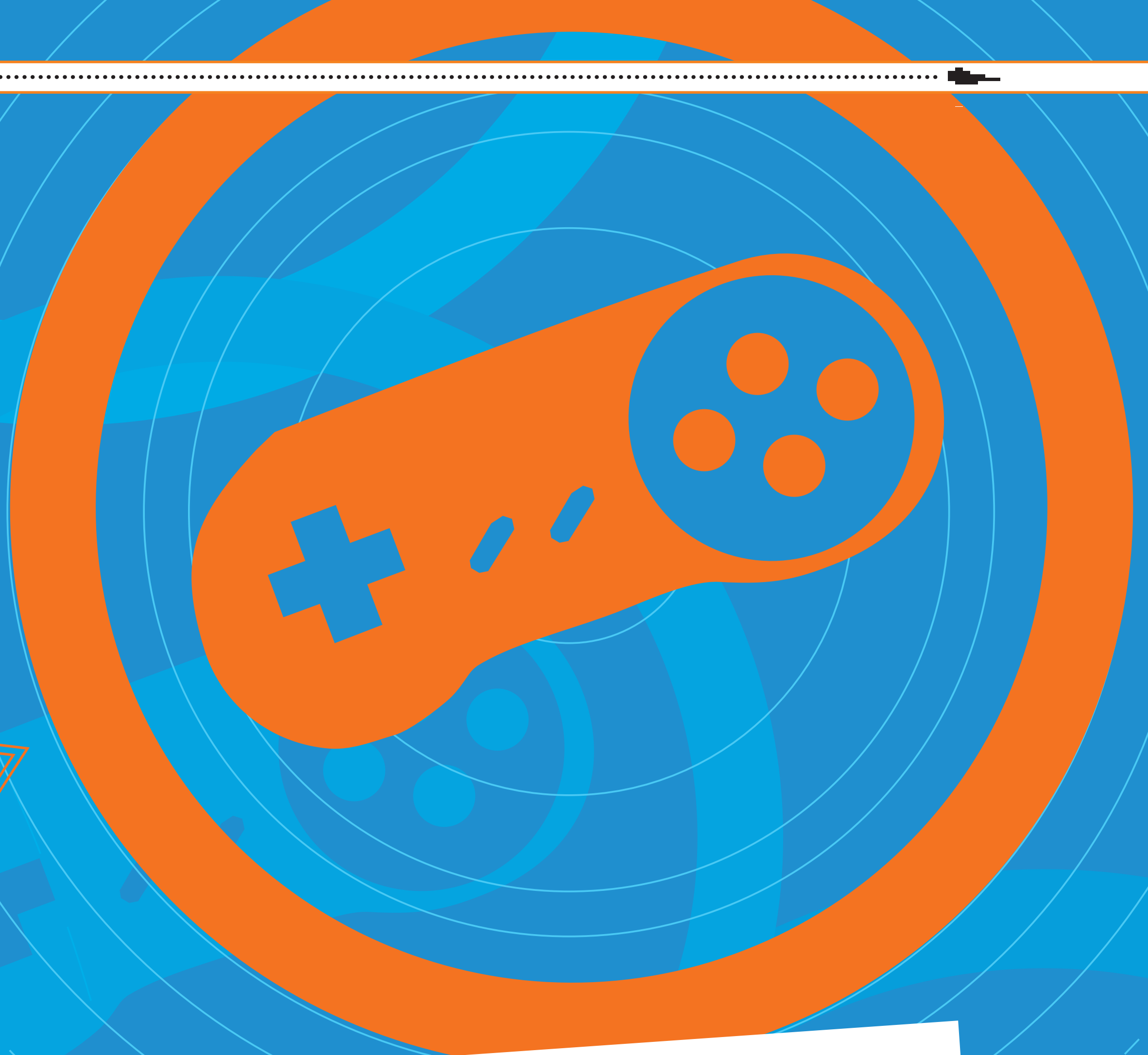
Retro Gamer: So what's this uWink thing all about then?

Nolan Bushnell: uWink's centre of gravity is games that are highly addictive and, in some ways, more reminiscent of the games that were developed in the early days of this industry. Our games are simple, easy to learn, but very difficult to master and we think that there is a need for this type of game today. The hardware we are using is PC driven.

Retro Gamer: Finally, how do you feel about Infogrames adopting the Atari name?

Nolan Bushnell: I don't mind it, but I'm disappointed because I wanted to get control of the name and return Atari to its previous glory – but under my tutelage. RG*





>Coin-op Conversions

Having had your socks blown off by the arcade behemoths, it was only natural that you'd want to play the games at home on your humble computer or console. The conversions wouldn't look or sound as good, but they'd play the same, right? In the first of a two-part feature, Robert Mellor looks at how the home versions of a couple of classic Sega arcade games fared...

In the mid 1980s, Sega genius Yu Suzuki changed the face of arcade games. Thanks to Suzuki and his AM2 team, punters were treated to several technically amazing machines that would quickly become certified coin-op classics. As naturally as night follows day, conversions were released for all the major platforms of the day, and they varied wildly in quality. We begin by looking at two AM2-developed arcades games: Hang-On and Space Harrier.





>SINCLAIR VERSION



>ARCADE VERSION



>AMSTRAD CPC VERSION

>Hang-On

This 1985 racing classic was the first game that Yu Suzuki and his soon-to-be legendary team created. You took on the role of a gutsy competitor who had to race his motorbike through several twisting stages. The game's scenery changed instantly every time you crossed a checkpoint. It was pretty much the first genuine vehicle simulator in an arcade setting and took full advantage of the superior hardware that Sega was working on.

Although later games on similar hardware would make Hang-On look inferior, this game opened the floodgates in terms of what was possible with the core 68000 setup. The game ran on what became generally known as 'Space Harrier Hardware', featuring the obligatory Motorola Dual 68000 main CPU. The hardware: outputted a video resolution of 320x224; had the capability to display up to 128 on-screen sprites, two tile layers, a text layer, a sprite layer capable of hardware zooming, and a road layer; and had the ability to draw translucent shadows. The sound in the game was powered by a Z80 sound CPU, which was complimented by either a YM2203 or an YM2151 chip and a custom PCM chip. All this combined to create a game that blew away the arcade competition of the time, with super-fast, knee-scraping gameplay, brilliant graphics (in terms of both colour and detail), and a catchy, well-composed soundtrack.

What really made the game stand out though, were the various cabinets it was housed in. Hang-On came in two basic flavours, namely stand up and sit down. The stand-up version featured a realistic handlebar complete with a throttle and brake lever, and a tachometer and speedometer. The sit-down edition was an almost full-sized bike that you could actually steer by leaning left and right. The only setback to this version was that the bike failed to use the force-feedback elements, meaning the experience wasn't quite all it could have been. Still, it was a superb machine that always gathered a crowd of admiring onlookers.

A sequel to the game was released in 1987 in the form of Super Hang-On. This updated version added a wealth of extras, such as the choice of a number of courses depending on which skill level you selected, an excellent soundtrack and even better graphics with stages actually morphing as you progressed, à la OutRun, rather than the sudden flash changes that were seen in the original. The sequel also featured a turbo-boost button that propelled you to speeds of over 300kmph, making it one of the fastest land-based games to grace the hardware.

Home conversions

Although Hang-On and Super Hang-On weren't as prolific in the home market as the other AM2 games, they were converted to several systems with varying degrees of success.

Sinclair Spectrum: Electric Dreams won the Super Hang-On licence in 1986 and most of the home computer formats were covered. The Spectrum version featured a nice loading screen, but that's where the impressive presentation ended. It was cursed with some horrible opening music, which was set to an on-screen depiction of the coin-ops level-select map, and the programmers decided to completely forgo any kind of title screen. The in-game action didn't feature any music to accompany you on your journey, just the odd bit of uninspiring spot FX here and there.

The game scrolled well enough, but wasn't as fast as it should have been and was prone to sluggish and awkward handling. Strangely enough, in contrast to Amstrad's conversion, the Spectrum version featured more colours, slightly more detail on the main bike sprite, more colourful roadside objects and a little splash of colour in the status text. Visually, it was surprisingly similar to the style of OutRun on the Spectrum, with well-presented but hollow-line drawings used for the main sprites



>COMMODORE 64 VERSION



>MASTER SYSTEM VERSION



>ATARI ST VERSION



>MEGA DRIVE VERSION

and a basic two tone-style background. It also managed to recreate the undulating road effect to some extent.

Amstrad CPC: The Amstrad version of Super Hang-On featured an appallingly designed level-select screen that looked like it had come straight from the Atari 2600. Like Spectrum's conversion, the music featured in the game was once again painful to listen to. The programmers also lazily decided to port the Spectrum's in-game graphics to a machine that was obviously capable of more. However, this version let you choose whether you controlled the game via keys or the joystick and allowed you to alter the sensitivity of the controls. The game played very slowly though, and the motorbike took an excruciating time to straighten up after taking a tight corner. A wasted opportunity.

Commodore 64: Another nice loading screen featured on the 8-bit Commodore rendition, but the options were typically limited C64 fare. As was usually the case, the SID chip came through and managed to churn out some cool-sounding music for the game, but overall the title was a little disappointing. Despite offering a choice of different courses depending on the skill level, the scenery in each was remarkably similar, save for a different colour scheme here and there. The game did manage a fair bit of on-screen colour in each respective stage, but there was a decided lack of roadside detail, with blocky main sprites making it pretty much indistinguishable from the arcade original.

Atari ST/Amiga: The 16-bit home micros received really good versions of Super Hang-On and Electric Dreams has the proud boast of producing what is undeniably the best port of an AM2 game on a home computer. The usual slight graphical and sound differences applied between the ST and Amiga versions, but overall both were very good. The Amiga version in particular featured excellent mod renditions of the selectable theme tunes, complete with simultaneous spot FX, a scrolling text intro lifted straight from the coin-op, and a good selection of options for in-game play. The play area was large, not cramped by an annoying border, and the game played smoothly and at a fast pace.

Various courses were available depending on the difficulty you selected and the programmers even managed to cram in a scaled-down version of the scenery morph, as seen in the coin-op. The title was lots of fun to play and was basically a very nice mini-representation of the arcade game.

Sega Master System: Sega's version of the original Hang-On proved to be something of a mixed bag. The play was fast, but it featured three gears that the player had to change, rather than the straightforward pedal-to-the-metal acceleration of all the other versions. Annoyingly, players would also find that their motorbike exploded on the spot the second it was touched by either another bike or any roadside scenery. This was especially grating when an opponent approached and accelerated straight through you, totally obliterating your vehicle but not his.

There was no in-game music, but decent enough spot FX, with a snippet of the main theme tune used on the title screen. Like other 8-bit versions, it lacked in-game detail, which meant the track was very bland and unexciting. Sega tried to make amends by releasing Hang-On 2 shortly afterwards, which added in-game music, but sacrificed speed, looks and control, making it an even poorer game than the first.

Sega Megadrive: The 16-bit Sega port was produced by the Japanese software giant itself. The game made a memorable appearance on the Mega Games 3-in-1 cartridge and, like most of Sega's conversions of its own titles, was a very good rendition. The game was fast, smooth and looked great despite a very obvious tiling effect. All the features of the coin-op were present, including the excellent intro screen, level/course selection and the option to choose from brilliant renditions of all the original theme music.

A perfect port of the original Hang-On did eventually appear on a Sega console, as a bonus game in AM2's epic Dreamcast title, Shenmue.





>SINCLAIR VERSION



>ARCADE VERSION



>COMMODORE 64 VERSION

>Space Harrier

Space Harrier was also released in 1985. The game really pushed Sega's arcade hardware to its limits, allowing players to see the full potential of what AM2 had to offer. Set amidst an alien landscape know as The Fantasy Zone, you controlled a plucky blonde-haired space cadet equipped with a futuristic laser cannon that was both your weapon of defence and your means of flight over 18 enemy-populated levels.

Visually, the game was pure eye candy, with an unbelievably tripped-out playing area – Incan, prehistoric, oriental, and futuristic influences were all thrown in for good measure. The game featured a multitude of colourful characters and play areas contained everything from giant magic mushrooms to woolly mammoths.

The title used the hardware's sprite-scaling and zooming capabilities to the maximum – massive enemies seamlessly advanced towards you and the tiled floor created the illusion of incredible speed. Unbelievably, the play would get even faster at certain points, such as the levels in which you sprinted through an area that also featured a tiled roof. After battling your way through each zone you had to confront the respective end-of-level boss to advance to the next blindingly bright scenario. A fun bonus level would also appear every so often, in which you rode atop a giant furry caterpillar. When you reached the final level, you had to destroy every boss again in rapid succession.

Once again, Sega offered prospective buyers the choice of either an upright cabinet or a rolling model complete with all the trimmings. The upright was much the same as the stand-up version of After Burner, in that it featured a flight stick with which to control the on-screen sprite, complete with a fire button to activate the laser cannon. The rolling cabinet, of course, went one step further, featuring a hydraulic system that moved the player along with the synchronised on-screen action. While not quite as thrilling as the cockpit version of After Burner, the rolling cabinet showcased the talents of both the AM2 development team and Sega's engineers.

Home conversions

Even though converting this monster of a coin-op to home machines was always going to be difficult, at least 15 different ports of the game made it onto the home market, with selected formats even receiving a souped-up sequel as well.

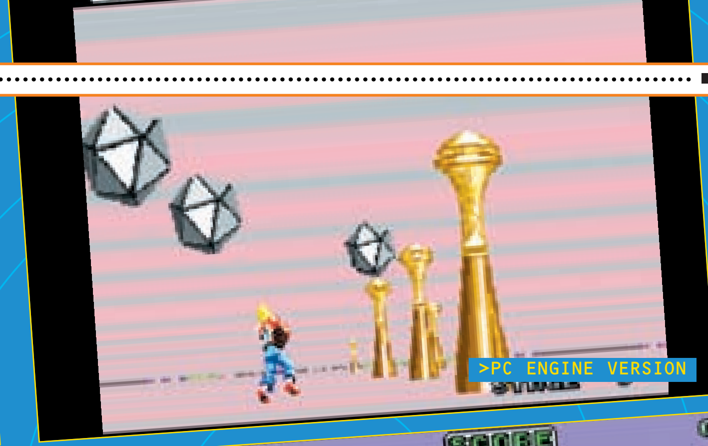
Sinclair Spectrum: Elite Software tackled the conversions for this title in 1987, and the Spectrum version was blessed with a proper tiled floor, as seen on the coin-op. While not completely solid, this was a very impressive sight on such a limited format. The game played surprisingly well, but there was no in-game music, just a lot of very bad sound effects. The controls were a little annoying, as your character would automatically centre every so often. However, the title ran at quite a pace and the general look of the game was great, with just a tidy status panel at the bottom of the screen rather than an all-encompassing border. Most of the sprites were typically hollow and there were a couple of colour layers for the scenery, but the main sprite was reasonably solid and the machine handled the mighty boss characters surprisingly well.

Commodore 64: This was a pleasing conversion with a jolly SID-chip rendition of the arcade's main theme tune. The in-game display area was large, with just a smattering of text for the status display, and the whole thing moved along at a very acceptable rate with fairly smooth scrolling. Unfortunately, the game was a let down by the sprite animation, as the main character's movements looked a little goofy.

Converting such a gargantuan coin-op to home 8-bit systems was always going to be a big challenge and, as with most home versions of AM2 games, it quickly became

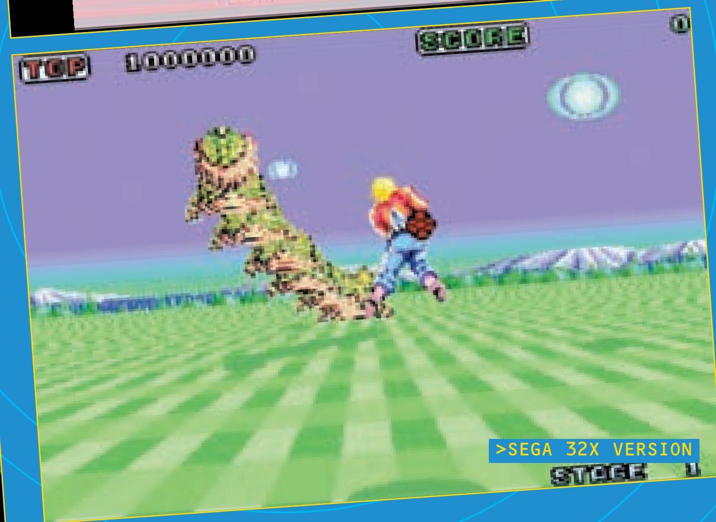


>AMSTRAD CPC VERSION


>PC ENGINE VERSION



>ATARI ST VERSION



>SEGA 32X VERSION

apparent that, stripped of the lush graphics and thunderous sounds of the original, the experience simply wasn't as much fun. But Elite did about as well was possible and at least produced a game that ran quickly.

Amstrad CPC: This version began with a typically tinny-sounding interpretation of the arcade's main theme tune as title-screen music. The actual game itself, however, proved to be a very weird experience. For a start, the floor wasn't tiled and it instead featured a set of thin blue lines that would advance over the grey floor to create the illusion of movement. The graphics themselves were a very strange mix of both raster and vector elements – your character and the horizon were solid, while the bad guys and scenery were, by and large, simple line drawings. Thankfully the status panel was at the top, so the overall look of the play area wasn't as bad as it would have been had a border been used. Overall, the game wasn't too bad to play, but it wasn't on a par with the Spectrum and C64 versions.

Atari ST/Amiga: Elite's 16-bit versions were decent conversions – they were a little rough around the edges, but they captured the general feel of the coin-op quite well. The multi-load was perfectly acceptable, particularly in the Amiga version, and the tiled floor was present and even bigger than in the coin-op with a nice perspective change as your character moved around the screen. The Amiga mod also provided a faithful version of the arcade version's main theme tune and even managed to reproduce some of the original's speech samples to add a bit of atmosphere. The game ran quickly and smoothly, the spites were big and well animated and the Amiga's full-screen display was certainly very impressive.

The machine's limitations tended to show through here and there, though. For example, the tiled floor was forced to change colour in correspondence with the boss characters as you gradually depleted their energy.

Sega Master System: Sega's 8-bit console received a seriously scaled-down version of Space Harrier. The sprites were big and colourful but looked messy in places – many enemies had a square tile around them to comply with the scenery of any given level. The bosses themselves were well reproduced, but their appearance caused the game to chug and their fire was surround by an ugly, colour-co-ordinated block. Like the Amiga and ST versions, the game sported some of the arcade's sampled speech and a clone of the arcade's attractive mode for the title screen. Unsurprisingly, the Game Gear version was identical to the Master System counterpart.

PC Engine: The PC Engine did an excellent job of catering for the impressive graphics and speed of the original. The music was well done, the sprites were large and moved smoothly, and the game ran at a suitable pace. The floor wasn't a truly tiled replica of the arcade game, as the PC Engine instead opted for a succession of brightly coloured lines to simulate the scrolling effect. The bad guys were also well recreated, including the bosses. The only setbacks of this version were perhaps the slight slowdown it was prone to now and again, and the tinny sound effects.

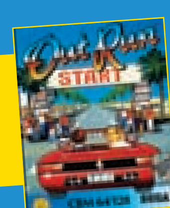
Sega 32X/Sega Saturn: While the standard Megadrive was home to a version of the rather lacklustre Space Harrier II (as were many home formats in the early 90s), Sega decided to convert the original classic to both its 32X Megadrive add-on and its Saturn console in the mid-1990s. Both of these versions proved to be essentially arcade-perfect ports of the coin-op, finally allowing players to really experience Space Harrier in all its glory in the home.

As with OutRun and After Burner, a standalone version that featured remixed music was created for the Saturn and was released to the Japanese market, while the rest of the world were treated to it as part of the superb Sega Ages compilation set. More recently, Space Harrier appeared on the Dreamcast as a bonus game in Shenmue. RG*



Next month

We compare the many home conversions of AM2's most memorable titles, OutRun and After Burner



eMag



>Desert Island Disks

This month's castaway is David Doak, MD of Free Radical Design and the man behind GoldenEye on the N64. Paul Drury asks the questions...



>WHO?
David Doak – formerly of Rare and now top man at Free Radical Design

"Yeah, but if I'd written a book, I'd have been on the fucking cover." David Doak isn't happy. Fifteen seconds ago he was smiling broadly and musing how proud his mum will be. I've shown him a piece in the Oxford University Magazine about past scholars now working in the videogame industry. There's a picture of GoldenEye, a game that sold 8 million copies, grossed half a billion dollars and invariably appears in the top 10 of all-time greatest games lists. But in the article all it's given is a passing mention, and that's only thanks to a letter by Edge writer David McCarthy, pointing out how often the field of game design is overlooked. We share a moment of righteous outrage at the derisory treatment of videogames by the media in general. It's something that clearly riles David. As he starts to wax lyrical about his Desert Island Disks, the passion he feels for gaming is obvious and in the article in question it's once again being treated as the poor relation of other more established creative endeavours.

Whilst I can detect the passion in his voice, I struggle to hear any Irish brogue in there, despite the fact that he was born and grew up in Belfast. Maybe it's the 10 years he spent at Oxford, initially reading biochemistry at Brasenose College, then going on to study for PhD and Post-Doc. Computing wasn't a big part of his studies, yet this is the era in which many of his favourite games were produced. That's probably not a coincidence, as David admits that he spends a lot less time playing games now that developing them is his job. However, what he learned about the importance of tempo, immersion and balance in those SNES days has a direct input into how he makes games today. "If I could only take one console with me, it'd be the Super Nintendo. A lot of great games, though a lot of crap ones too, which always seemed to have the Nintendo Seal of Approval…"

Whilst his route into playing videogames is fairly typical – his story of playing Space Invaders in his local Spar shop for a weekly prize takes me back to a time when arcade machines were everywhere – his entrance into the industry is not. Seeing an advert in Edge for a systems administrator at Rare, Doak encouraged one of his students to apply. When he declined, Doak decided to apply himself "for a laugh" and found himself in charge of the company's Silicon Graphics machines. "I went there with glamour in my eyes, but after six months I'd revised my opinion of quite a lot of the people who worked there." He was all ready to leave, but was persuaded to stay on and join a small team led by Martin Hollis, which was working on a new departure for Rare at the time – a first-person shooter. And it had a big licence too…

"We were like a mini-company inside Rare making an atypical game that no one really thought was going to be any good. The general feeling was we were a bunch of students wasting time. And then when it went into testing there was this very good feedback, initially from testers in-house but also from Nintendo. People were putting in voluntary overtime to test this game." The game in question was GoldenEye for the N64. Nintendo is renowned for its rigorousness – "it likes to test things to death and that's the right way to make good games" – so people started to take notice. They even got a visit from licence-holders MGM who nearly scuppered much of what makes Goldeneye so special. "They turned up out of nowhere near the end and said 'No, it was unacceptable… Bond didn't do those things.' They wanted a sanitised version of Bond who doesn't shoot anyone. If you go back to Sean Connery, he'd shoot people for a laugh. Smoke tabs, shoot people, shag birds." The team literally stuck to their guns and created one of the landmark games of the Nineties.

Rare talent

All this is even more amazing when you discover that for all but two of the team it was their first game. Was this freshness key to producing a game of such quality? "I think so," muses David. "That and being slightly isolated. It was overambitious but





Perfect Dark suffered from frequent delays, but it emerged as a worthy follow-up to GoldenEye





Free Radical Design is best known for the excellent TimeSplitters series

in the end just about got there. If there'd been any kind of sensible control it probably wouldn't have been allowed to be as ambitious as it was." You get a vision of wide-eyed scrawny kids taking on an established formula and moulding it into something new, exciting and essentially theirs. Like the Ramones on their debut album. Producing a game probably isn't as exciting as proto-punk in 1976, but as David talks about the GoldenEye team, you get a sense of their camaraderie, of their 'us against them' attitude and their desire to prove they could produce something epic. They sound like the coolest gang in town.

And the gang lives on within these very walls – the rather plush Nottingham offices of Free Radical Design. After GoldenEye, the team was put to work on the follow-up, Perfect Dark, but soon stumbled. "GoldenEye pretty much exhausted the performance of the machine. It was hard to push it further. Perfect Dark had some good ideas but was dog slow."

Martin Hollis left Rare in 1998, an event that seemed to trigger the gradual dissolution of the team. David left at the end of 1998, soon followed by Steve Ellis, the programming genius who "sat in a room with all the game code written for a single-player game and turned GoldenEye into a multiplayer game." (We got to shake his hand later and thank him on behalf of gamers everywhere. He looked bemused, but flattered.) Others followed and now four of the original nine who worked on the project work here.

With the hugely successful TimeSplitters series (the third instalment is due out next year, through publishing giants Electronic Arts) and the forthcoming Second Sight, Free Radical Design has established a reputation for quality and innovation. David explains how acutely aware they were when setting up the business of the graveyard of start-ups: "I will launch my own company, do the most ambitious game known to mankind and four years later I will have nothing." He praises Sony for backing them in the early days and puts this down to the fact it saw PS2 as "capable of a nicely rendered 3D game that ran at a decent frame rate. Everyone else saw it as a platform for interactive Toy Story movies. There were so many unrealistic expectations of games that looked like the Tekken intro. I mean for fucks sake..."

Halfway through selecting his eight games, David starts to struggle. We're worried he's running out of ideas, but quite the contrary – in true High Fidelity style, he's worrying about what he could possibly leave behind. All the time he's peppering the conversation with videogame anecdotes: playing Robotron with "a pint of beer and a fag on" or missing youth club because he was mesmerised by Pong, or strapping colleagues to chairs and forcing them to play Zelda 'til they recognised its greatness. As with so many of us, gaming has woven itself into the fabric of his life and simply recalling a Spectrum classic can evoke a whole series of half-forgotten events and faces. Proust wouldn't bite on a biscuit these days to kick start his memoirs, he'd plug in an Atari.

Day of the Tentacle

LucasArts – PC

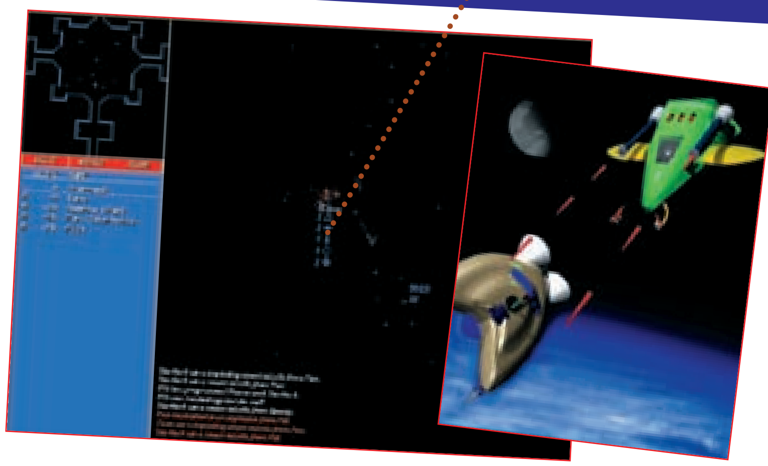
There was a good logic to the thing... I loved the speech and the time travel stuff. Changing the American Flag into a costume to dress up as a tentacle – fantastic. It's been a while since I've played it but the humour and story has not been diminished by time. Yes, I did complete it. It's never been surpassed in terms of point-and-click adventures.

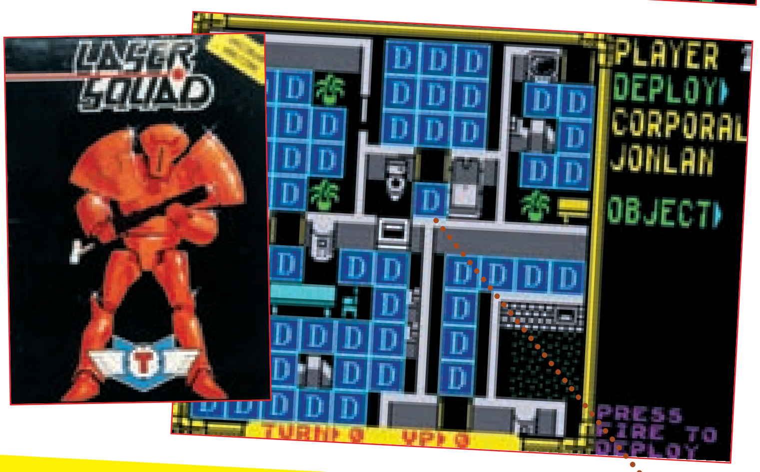
X-Pilots

Stabell, Schouten, Gijsbers – PC

Whilst looking after the network at Oxford we discovered X-Pilots. It's kind of like multiplayer Thrust. Back in 1991 everyone who was in the know was playing this online game – and it worked. We were the biochemistry Department at Oxford playing teams of Astrophysicists from Cambridge and UMIST. Tournament was hardcore: power-ups and only eight bullets on screen. During these complicated dogfights, the real fucking masters would be able to beat you in a deathmatch, while typing insults with the other hand...









Laser Squad

Target Games – Spectrum

I played this a lot on a big clapped-out colour TV whilst doing my D.Phil and sharing a house. You need two sets really: one to play on and another showing videos while it's not your turn. It's a turn-based combat game using Traveller snapshot combat rules (there's a whole world of sad there). The Gollop brothers went on to produce the X-Con games, but what's good about it has been diluted. Here it's done charmingly – very elegant and entertaining. They take an incredibly asymmetric scenario – you play a bunch of assassins, your opponent has to stay alive – and yet it's almost perfectly balanced. It's so well balanced it's like when they took their hands away they were amazed to find it stayed standing.

Grand Prix Legends

Papyrus – PC

Before and after this, Papyrus has made a string of shit racing games, but this... A great concept, good physics model, good AI and rock hard. Sit most players down and they'll rev it up, doughnut it and are off the track. Since being a child, I've tried unsuccessfully to get my dad to play driving games, but I set him up on this and he was happy as Larry.

Super Mario Kart

Nintendo – SNES

My younger brother bought it the day before I was going back to Oxford. I stayed up all night playing it and bought a SNES on my return. I was just completely knocked out by it. I think it's got one of the best co-operative modes in any game, though it's not labelled as such. You see all the other characters are cheating bastards… the better you do the more you get shat on. Like life really. Your friend can ride shotgun and take some of the flak. And you need two more people shouting out advice: "Dump that… you need a shell!" Great game and such a huge learning curve – we were still getting better three years in.

Super Bomberman

Nintendo – SNES

The GoldenEye team almost fell out over this game. We'd play it at lunchtimes and Chris Stamper would wander round at 3pm with this look on his face of "What the fuck are you doing?" Time just flew past… It got really serious, with league tables and controllers being thrown round in temper tantrums. The game mechanics are just so simple. Because you can see everything that's going on, watching other people is as important as watching yourself. It embodies the direct multiplayer nature of console gaming… there's killing someone, and there's *telling* them you're going to kill them and *then* killing them: "You're going home in a fucking ambulance". It's the best console multiplayer game ever and I don't think anyone will make one better. Nintendo repeatedly tried to make it better and repeatedly made it worse.









Legend of Zelda

Nintendo – SNES

The original on the NES is nice and many would be surprised how many elements of the Zelda universe are in that game. The traversal part of the game is made entertaining by the distraction of killing people. The integration of you developing your character and the accessibility with the background is really well done. You're thinking "I can pick that up now… if I went into the dark world I could get there… oooh!"

GoldenEye

Rare – N64

An indulgent choice. Looking back, there are things in it I'd be wary of attempting now, but as none of the people working on the code, graphics and game design had worked on a game before, there was this joyful naïvety. I still play the single-player game and realise "there's something about it that's very good," something to do with the repetitive part of it, the sweet tempo, the level of interaction with the background… it looks dated, but the gameplay is solid.


Out on a limb
Tree Top
Inside the trunk
The Greenhouse
Tree trunk
The Cess Pool
Maria's Hideout
If I were a rich man ...
Into the wide blue yonder
In mid air



>Jet Set Revival

Over 20 years after the release of the original Manic Miner, there are now well over 60 Manic Miner and Jet Set Willy clones for the Spectrum alone, all created by enthusiastic hackers. Richard Hallas is credited with kick-starting this craze, and here he takes a personal look at how the Miner Willy revival came about

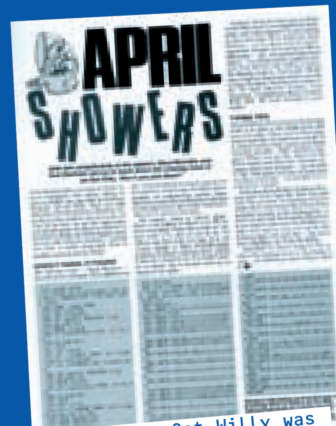
Everyone has fond memories of Miner Willy. His initial appearance in Bug-Byte's Manic Miner on the Spectrum back in 1983 may have been a low-key affair, but the quality of that first game assured his popularity for years to come. The success of Manic Miner alone has ensured that author Matthew Smith still remains in people's minds, decades later, as the demigod creator of one of the most enduringly popular games of all time.

Manic Miner's sequel, Jet Set Willy, was therefore eagerly anticipated and proved to be even more popular than the original, despite some nasty bugs in its first release. It's a testament to the game's underlying quality and appeal that the bugs didn't affect its popularity. Any game that contained coding errors serious enough to corrupt its data and prevent it from being completed perhaps deserved to be a commercial failure. Not so with JSW. If anything, the bugs may actually have added to its appeal.

After all, these were the days of the young hackers. For many, being a child of the 80s involved learning to program computers for fun. The games were fun too, but in those days you had a realistic chance of becoming a good enough programmer to write your own game, have it published and earn loads of money. Even if you didn't set your sights so high, you could still have a lot of fun by hacking away at other people's games, finding out how they worked and learning to improve them. JSW was probably the ultimate game for such players.







Most games are previewed and reviewed and that's it, but Jet Set Willy was still featured in magazines months after its release

>Hacking away

The fact that Mega-tree, the third Miner Willy game, never materialised mattered less than it might have done because of the spirit of the time – enterprising hackers were willing to go as far as creating editors for other people's games. Willy's last official appearance was in Jet Set Willy II, an extended version of the previous game by a different author, which most players found disappointing. But the hackers kept prodding away at Willy in their bedrooms and, thanks to the rise of the Internet a decade later, their efforts were reborn for the world at large to see and enjoy.

The amount of coverage JSW on the Spectrum received in magazines (including maps, pokes and general rumour mongering) was unprecedented. There's probably no other Spectrum game has received so much attention, before or since. Both Crash and Your Spectrum (later Your Sinclair) devoted significant space in several issues to JSW, and printed tips, pokes, maps, bug fixes and even game utilities. Your Spectrum was notably the first to publish a new screen for the game – a type-in listing produced a special edition of the game with a new room in addition to the 60 already present.

Your Sinclair later published a JSW editor to allow players to create new games, but it was slow and hard to use. Another editor, from Softricks, was better, and was even published commercially with Software Projects' approval, but it still wasn't especially good. By far the best was a utility unimaginatively titled Jet Set Willy Editor, and it's this program that formed the basis of the JSW revival of recent years.

Lost & found

It was Jet Set Willy Editor that motivated me to produce a couple of JSW games myself, and I have quite an interesting story to relate about this editor. I went to school in Wakefield, and in my early teens there were two computer shops in the city that held large stocks of Spectrum games. My favourite was Microbyte, but the other, The Computer Store, sometimes stocked more obscure titles. One day, while browsing The Computer Store's tape racks, my eyes fell on an enticing-looking cassette. It had a nicely presented but slightly home-grown-looking inlay showing a blue floor plan of a house with some red bricks below it, superimposed over which were the words 'Jet Set Willy Editor'. Being a great fan of JSW, I was rather excited to find this, but I couldn't decide whether to buy it or not. I only had pocket money with me and I'd never heard of this editor or read a review of it. What if it wasn't any good? And even if it did work, did I really want to edit JSW? Would I really be able to produce a whole new game? It sounded like a lot of work even if the editor was good, so I walked out of the shop without buying it.

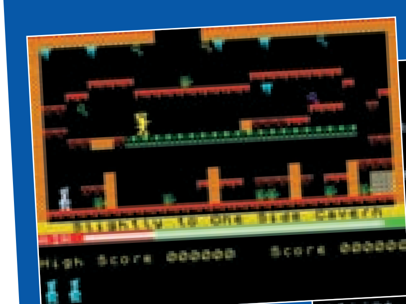
It niggled away at me though, and I knew I wanted it really, so I went back to the shop a few days later. The tape was still on the shelf and with a little trepidation I handed over the money. When I got home and loaded the editor, I discovered that it was superb, far better than I could have anticipated. In the summer of 1984, I used it to create my first new Willy game, Join the Jet Set!, which I gave to a few friends at school. They all liked it, and its brief and limited success led me to start another game set in space. I lost interest part-way through that, and the editor and games were put away and largely forgotten for the next decade or so.

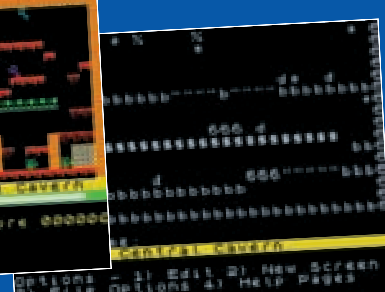
When I first got an Internet connection in 1995, I was amazed to discover the comp.sys.sinclair newsgroup and a lot of Spectrum-related resources on FTP sites and the fledgling Web. The Sinclair group was full of really friendly people, and although I hadn't given my old Spectrum much thought since around 1987, all the happy memories came

>Miner alterations

It wasn't only JSW that was hacked. Manic Miner, the game that started it all, may have been neglected, but Miner Willy fan Lee Tonks recalls having a couple of editors for that game, too: a commercial offering called Manic Designer and the type-in Manic Miner Editor published by Your Sinclair magazine. In late 1996 he painstakingly retyped the Manic Miner Editor, but it was rather limited in its scope and only allowed certain aspects of the game to be changed. Nevertheless, he used it to great effect to produce an entertaining new Manic Miner game, Tales from a Parallel Universe.

Manic Designer was a much more capable editor, but sadly Lee's tape containing it was irretrievable. However, in 1997 one of its authors, Dave Webb, turned up and was able to supply a copy of his work, so Manic Designer was also made available to the public. Since then, many new Manic Miner games have appeared (around a dozen so far), some of which are very sophisticated.





Lee Tonks typed in Your Sinclair's Manic Miner Editor listing and used it to create a new set of caverns for Willy to explore



Several editors were released, but the Jet Set Willy Editor by Paul Rhodes is widely considered to be the best

flooding back in a wave of nostalgia. I remembered my old JSW game and thought how nice it would be to see it again.

Luckily, I managed to find the tape, so, using a DIY interface, I connected a cassette recorder to my PC and transferred the game successfully into emulator format. This took several attempts and each emulated 'R Tape loading error' brought a new wave of despondency, but the eventual feeling of elation when the game loaded successfully was considerable. I released my game to the denizens of comp.sys.sinclair, and it would be fair to say that the positive reaction it received astonished me – I've never had so much fan mail! But what of the editor that was used to create my game? I felt sure that I would be able to find a copy online, but no – the only one available was Softricks' editor, which seemed very crude by comparison. I wanted to rediscover the joys of the superb Jet Set Willy Editor that I'd used a decade earlier, but it was nowhere to be found.

I attempted to transfer my own copy, but I was unsuccessful. I tried several tape recorders, but the cassette's poor quality meant I couldn't get a successful transfer. Eventually, I posted my tape off to Barry Plewa, a fellow reader of the Sinclair newsgroup who ran a short-lived but very entertaining fanzine called Emulate!. He managed to perform the transfer, sent me the editor in emulator format and returned my tape.

Now comes the amazing part of the story. Unbelievable though it may sound, on the very same day that I received the successfully transferred copy of the editor from Barry, who should make his first posting on comp.sys.sinclair? None other than Paul Rhodes, the author of the Jet Set Willy Editor! I couldn't believe the coincidence and sent him an email to ask if it was really him. It was. What's more, he had a rather sad story to tell about his editor.

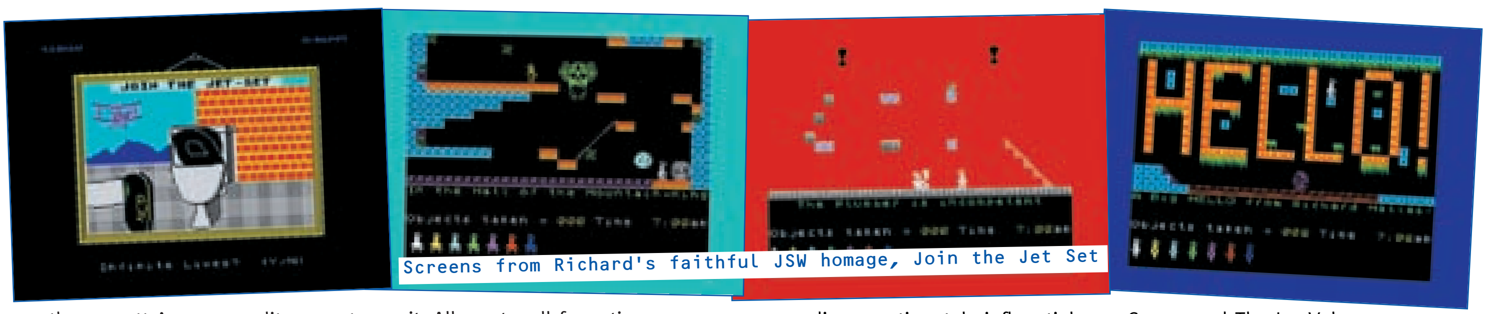
After writing the software, Paul approached Spectrum Electronics, a local computer shop in Luton, to see if they would buy it from him. Instead, the company offered to distribute it. All went well for a time – official approval was obtained from Software Projects, copies with colour inlays were produced (Paul's father drew the cover) and sent out around the country, and some copies were sold by mail order. However, shortly afterwards Spectrum Electronics suddenly and unexpectedly closed down, and Paul never heard from the proprietor again. He did receive around £50 and a box of cassettes, but his editor certainly didn't make him rich and he never discovered the extent of its distribution. Rhodes was therefore quite interested to hear that I had bought a genuine copy from a shop in Wakefield. He was also pleased to receive an emulator copy of his editor because, although he still had the original source tape somewhere, he hadn't transferred it himself.

Designing Willy's World

Your Spectrum magazine actually deserves a fair share of the blame for my creation of JTJS!, thanks to a spoof letter that was published in issue 7. It's quite likely that any Spectrum-owning JSW fan in their mid-30s will remember this letter, because it was disproportionately influential, especially considering that its claims were completely fictitious. The letter, written by one Robin Daines of Chester, claimed that if you took Willy to the bow of his yacht and waited there until 11:45pm (game time), a wave would appear and carry a raft to him. Jumping onto the raft would take Willy to a desert island called Crusoe Corner, and from there he could visit rooms called Tree Tops – The Sequel and In The Clouds. The reply to the letter, which played along with the deception, referred to The Ice Volcano below Hades.

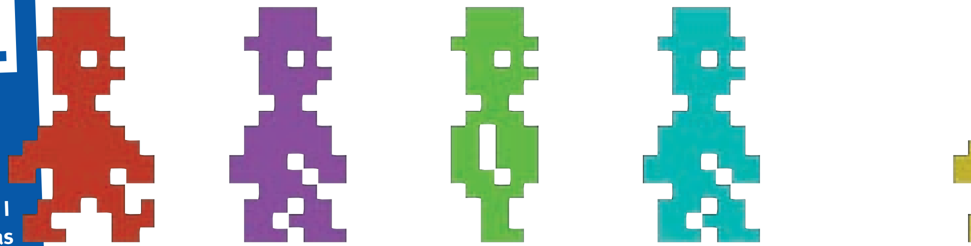
The claims in the letter were, of course, complete rubbish, but such was the excitement surrounding JSW at the time that many players admitted to having left their Spectrums running for the 11 or so hours of real-world time that it took to reach the point in the game when the raft was supposed to appear. Of course, they were disappointed to find that nothing happened, but the story took off in such a way that it was probably the inspiration behind the genuine ability in JSW II to sail the yacht to a desert island.

Anyway, the ideas excited me, and evocative names like Crusoe Corner and The Ice Volcano were just too good to waste. I was determined to use the editor to create a new game of my own featuring these mythical rooms. I began my design work with a Spectrum Graphics Pad – an A4 paper pad on which was printed a special graph layout that illustrated every pixel on a Spectrum's screen. As there could be a total of 64 rooms in my game, I realised that by dividing up one of these sheets



Screens from Richard's faithful JSW homage, Join the Jet Set

>A musical interlude



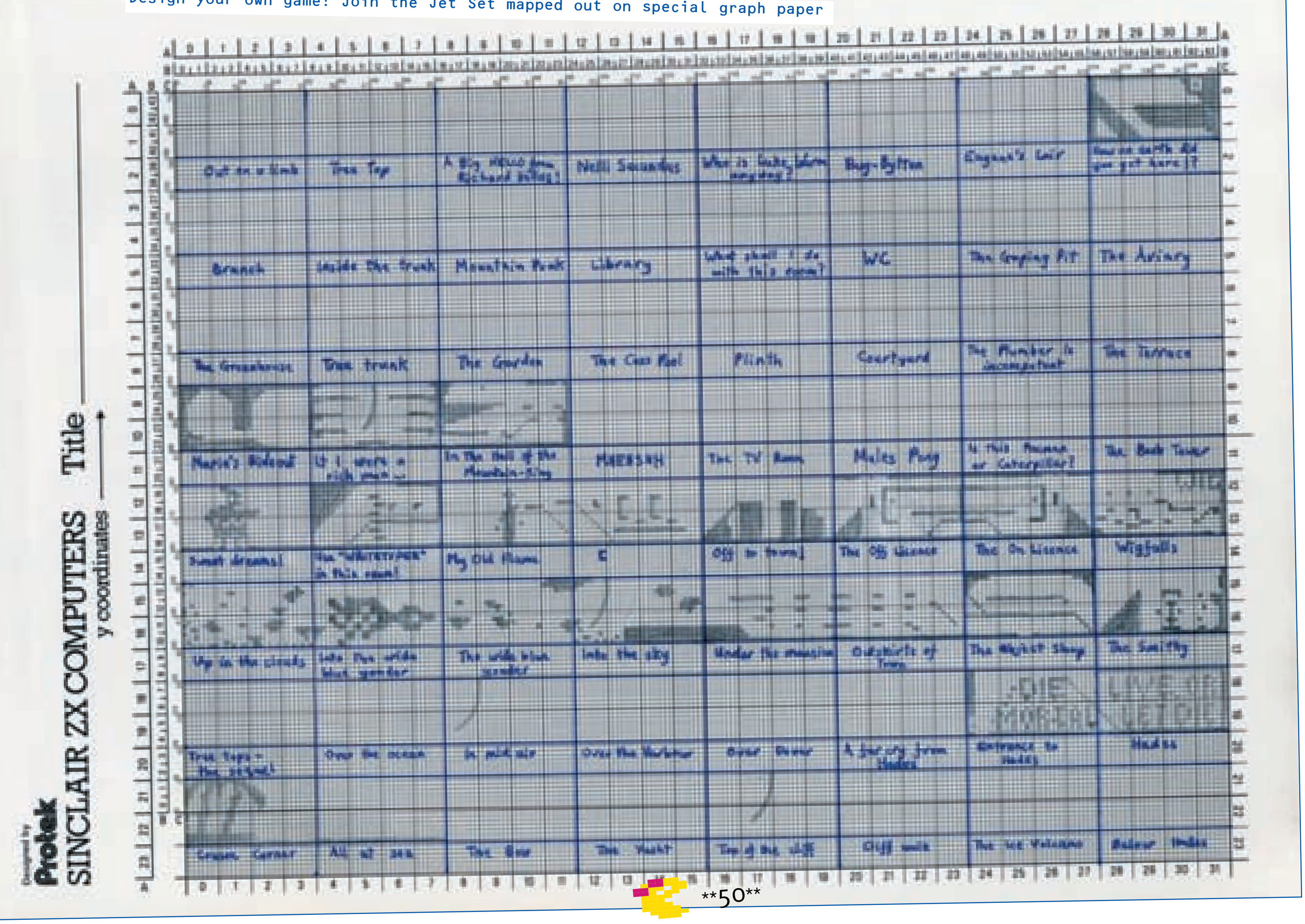
My personal contribution to the sphere of JSW knowledge (which I now regret never having submitted to a magazine at the time) was to work out how the in-game music was encoded. The result of my investigations was a choice of 10 in-game melodies that I created for JTJS!. Some were renditions of existing pieces, whilst others were tunes I'd dreamt up myself, but the user's choice from a selection of 10 was poked into memory before the game started, relieving the monotony of 'If I were a rich man' going round and round and round ad nauseam.

Later, in 1998, I wrote a technical document about music in the Willy games entitled A Miner Triad. It documented music in Manic Miner (both Bug-Byte's and Software Projects' versions of the game) and JSW, but not JSW II. Having produced new in-game music for both of my games, I decided to explain how it was done. To this end I wrote up what I already knew (how to replace the in-game tune) and then went further, analysing how to replace the title-screen music in JSW.

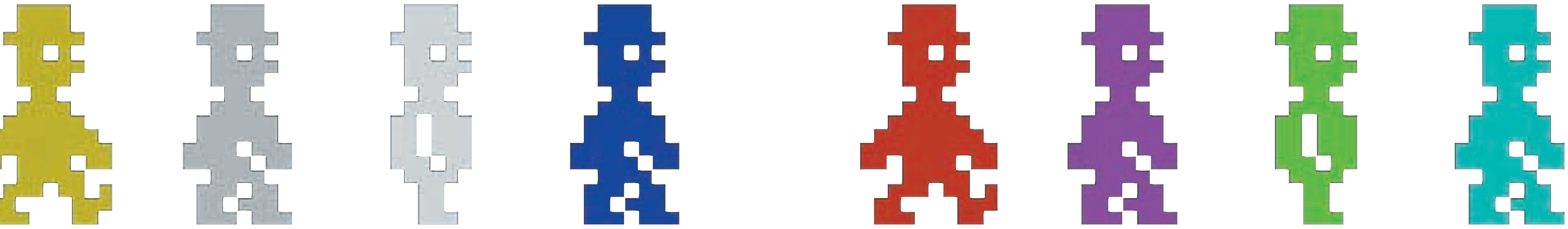
into an eight-by-eight grid, one pixel on the pad could represent one block in each room of the game. I therefore divided up the sheet into 64 rooms, dreamt up names for them all and the started pencilling in the basic layouts for each screen. After sketching out 24 rooms I decided this was a waste of time and that I'd be better off just designing my screens in the editor, so I abandoned the graph paper. However, it does explain why JTJS! has a completely rectangular map layout, unlike the much more sprawling design of JSW.

From the outset, my aim was to try and recapture the spirit of Matthew Smith's games. I therefore did my best to come up with a similar range of wacky ideas, in-jokes and whimsical graphics, but most of the rooms were designed to provide a genuine challenge. I also wanted it to be relatively easy for the player to travel around and see the entire map. Although there were various traps and tricky patches, I felt that the original game was really unfair at times, and that some areas were just too difficult to access (Tree Root being the best example of this). I particularly disliked the way a simple slip-up could lead to maddening death-loops, causing you to lose the entire game. I therefore made a conscious decision to design my screens in a way that, in the main, prevented this from happening.

I did retain a few rooms from the original game, though usually in an edited form, partly because they had to be there – I needed to retain The Yacht and The Bow, for instance, in order for the player to be able to travel from them to Crusoe Corner. Similarly, Entrance to Hades needed to be



Design your own game! Join the Jet Set mapped out on special graph paper

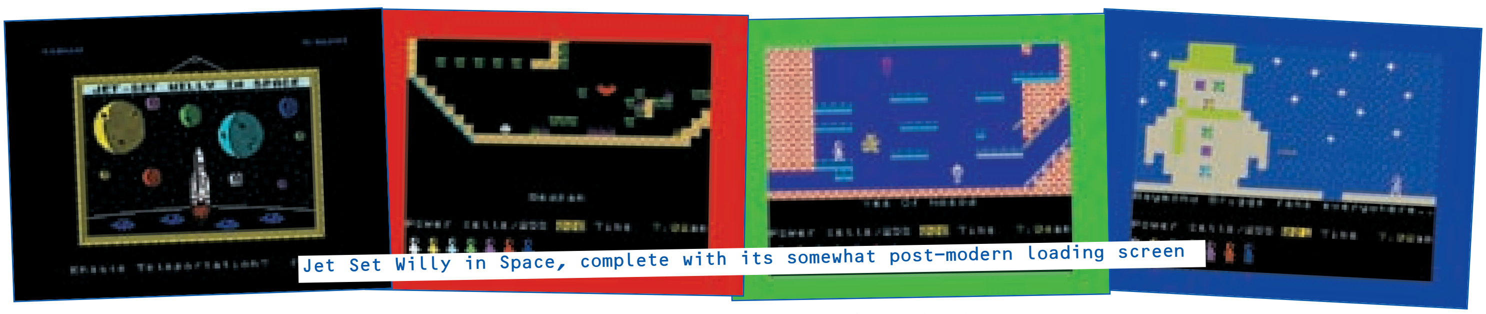


retained (though this time as a playable screen) in order to include Hades and The Ice Volcano below it. I also retained many of the existing guardian graphics, though I created new animations of my own, too.

All in all, designing the game took a fair amount of time and effort, but I was very pleased with the result. I made a new game that I actually enjoyed playing myself, and, although it provides a significant challenge, it's a lot easier to beat than the original.

The final frontier

The warm reception JTJS! received among my school friends was enough to inspire me to start creating a second game. Indeed, it also inspired others. One school friend, Adam Britton, actually created no fewer than three games of his own (JSW: The Continuing Adventures, JSW: The Deadly Mission and JSW: Willy's Holiday). My general feeling was that he made them a bit too hard (some rooms took the form of invisible mazes, which you had to navigate blindly) and they certainly had a different flavour from the original game, but they contained plenty of clever and inventive ideas.



Jet Set Willy in Space, complete with its somewhat post-modern loading screen

In my second game, Jet Set Willy in Space, I once again wanted to capture a fair amount of the atmosphere of the original game whilst placing it in a new setting. Willy wore a space suit and the game was set onboard a space station, but there was still plenty of silliness and surrealism, such as deadly teddy bears and the need to retrieve an unmentionable item from within a bedpan. I got about halfway through this game when I ran out of ideas and put it aside unfinished. Another school friend, Simeon Hartland, and I began designing a different space-based game, which was set on the surface of an alien planet. However, we ran out of inspiration (or possibly, school holidays!) about a quarter of the way through it.

I retrieved these two game fragments for emulator use in 1995 and found they actually tied together quite nicely – there was a space station and a planet's surface and it made sense to combine them. Unfortunately, putting them together wasn't easy because the two games had been designed independently, so there were overlaps in the data, with some rooms and graphics sharing the same 'slots'. By various acts of subterfuge I was able to rearrange the room and graphics data so that everything fitted together in one single game. As a tribute to Paul Rhodes, I also imported and used slightly modified versions of the two demonstration rooms he had supplied with his editor program. That left just a further 16 rooms to define, although I also needed to finish off several incomplete rooms from the fragmentary games.

Once the game had been play tested, it was time to add finishing touches and release it. Rather than drawing a new loading screen from scratch, to save time I took screenshots from various old Spectrum space games: a rocket from Jetpac, the planet surface from Timegate, some craters from Lunar Jetman and a selection of planets from Ad Astra. I then put these together to create the loading screen. As for the new in-game music, to reflect the game's space setting I wrote a bleepy rendition of the Star Trek: Voyager theme.

Jet Set Willy in Space was released for emulators a couple of years after JTJS!, in the last few days of 1997, as a Christmas present to the members of comp.sys.sinclair. Once again it was well received. It's significantly more difficult than my first game, though in theory it's possible to complete it without losing a life and I had again tried to minimise the chances of infinite death. As before, I wanted the player to be reasonably free to explore the game and to tackle the collection of the trickiest objects in whatever order seemed best.

Attack of the clones

When I first discovered the Spectrum scene on the Internet in 1995, the idea of creating new versions of existing games hadn't really taken off. Despite the existence of various JSW editors (or perhaps because of their poor quality), there were hardly any new variants, other than the standard games from Bug-Byte and Software Projects. There was a game called Jet Set Willy 3, which had clearly been created using one of the game editors, but unfortunately it wasn't especially good and didn't really capture the flavour of the original. There were also rumours of another JSW clone called Willy's New Hat. This turned up eventually and proved to be another oddity, as it was a wholly maze-based game with no moving baddies to avoid. Apart from these two games, there was nothing else available.

To be strictly accurate, I should mention that a commercial JSW clone game was released in 1985. Henry's Hoard by Alternative Software was actually based on a modified (and uncredited) version of the JSW game code, but it had enough alterations to make this less than obvious. The game had quite a different flavour to JSW, as well as a different central character and setting, so it doesn't quite count as a JSW clone.

Anyway, once I had successfully transferred my own game, I began hunting through my old Spectrum tapes and was able to find the three JSW games by my school friend, Adam Britton, so I transferred those as well. They were originally released with Emulate! magazine by Barry Plewa, and then made generally available. The 'drip, drip' approach of introducing a new JSW game every couple of months (from late 1995 to early 1996) really seemed to establish them in people's minds. Adam Britton himself then turned up on comp.sys.sinclair, was pleased to find that his three games had been retrieved, and proceeded to create a Special Edition version of the first one (The Continuing Adventures SE).



A selection of some of the earlier Jet Set Willy clones

At around this time (mid-1997), Arsen Torbarina created a new website, the Jet Set Willy Ultimate Fan Page, which contained lots of information about the games, full maps of JSW and JSW II, and kept track of the different versions of the game, both conversions of the official games to many computer platforms and unofficial sequels (at the time it was quite easy to keep track of the games because there were very few of them). The site was nicely put together and very interesting, but sadly it has been offline for several years now.

The emergence of JSW clones inspired John Elliott to carry out some ambitious hacking. He aimed to produce a new version of JSW for the Spectrum 128, entitled (naturally) Jet Set Willy 128, featuring new music, double the regular number of rooms and other new features. Originally comprised of all the rooms from JSW and my own JTJS!, JSW 128 evolved through several versions into a playable game and an excellent basis for completely new games. It took a while for JSW 128 to take off, but from the year 2000 onwards, people started to use it to create new games and well over a dozen have been based on it. John also wrote a PC-based editor, which has evolved to allow users to edit not just JSW 128 games, but other standard variants (including Henry's Hoard). John is currently working on a new set of JSW engines called JSW64, which allows the contents of the rooms to be more varied than before.

Hacking squad

There are now over 50 JSW games for the Spectrum (not counting the dozen or so new Manic Miner games), with more on the way. Many of these games involve significant hacking on the part of the authors – they're not just the same game with new screens, but include a variety of genuine new-game facilities.

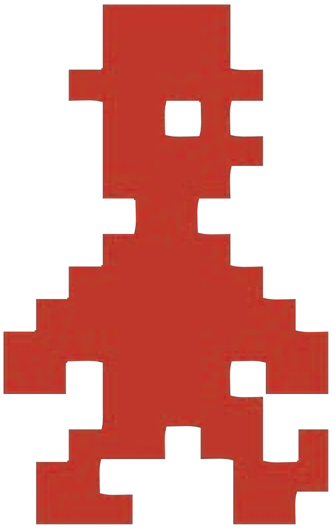
The first of the JSW games to include significant game modifications was Geoff Eddy's J4:The Fourth Remix (sometimes referred to as Jet Set Willy 4). This was the fourth in a line of increasingly sophisticated hacks based on the original JSW engine, and was designed by Geoff and Iain Eddy and their friend Alasdair Swanson. The previous versions weren't released, but J4 came out in 1999 to great acclaim. Rather than just being a modification of existing room data, J4 was the first JSW clone (if we don't count JSW 128, which wasn't really a new game) to make major changes to the way the game played. As well as cosmetic improvements, the guardians could behave in more flexible ways, a teleporter system was implemented, and patch routines could be included to make special events occur. Geoff Eddy went on to release a total of four games based on his so-called 'Geoff Mode' engine and a PC-based editor for creating them. Several new Geoff Mode games are currently in development.

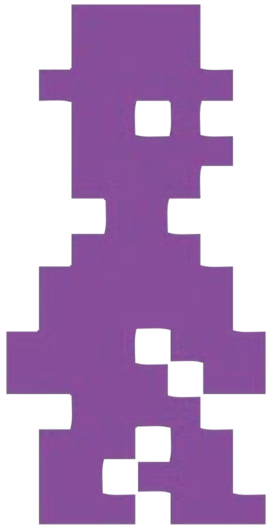
Another hack of the standard JSW game was performed by Jonathan Harston, who devised a way of allowing the game to access 72 rooms as opposed to the normal maximum of 64. However, perhaps the most impressively advanced JSW and Manic Miner games are those produced by Vidar Eriksen (Erix1). Unfortunately, the two games he created contain language and graphics that make them unsuitable for younger players – apart from that though, they're quite amazing. Both Eugene, Lord of the Bathroom (based on Manic Miner), and Maria vs Some Bastards (based on JSW, with apologies for the title) vastly extend what the underlying games can do. Not only that, but they have absolutely superb graphics (given the limitations of the Spectrum) and are fun to play, though very challenging. The games have been enhanced to such an extent that they only bear a passing resemblance to Manic Miner and JSW.

Special mention must be



Some of the more recent clones are stunning. It's hard to believe they run on the humble Spectrum





made of Andrew Broad, a man whose devotion to Willy is legendary. His dedication to the subject makes everyone else look like complete amateurs. If ever there was a man who could write a post-doctoral thesis on the structure, content, technical details and social implications of the Miner Willy games, it's Andrew. He continues to produce a never-ending stream of both Manic Miner and JSW games, including combination games based around a theme – for instance, Manic Miner: The Hobbit and Jet-Set Willy: The Lord of the Rings form a pair of tributes to Tolkien's books. It should also be noted that Andrew started his Miner Willy work several years before the general JSW revival on the Internet, based on his own hacking.

Andrew's examination of the games is considerable and he has produced his own editors and other utilities for both Manic Miner and JSW. He also has over a dozen Miner Willy games to his name, which have either already been published or are in development, and he continues to work on new ones. A new pack of games, Party Willy, was released as recently as April, and is clearly designed to blend the player's brain. Aside from the brand-new games in the pack, there are also Manic Miner: Jet-Set Willy (in which the JSW rooms are presented within the Manic Miner game engine), Jet-Set Willy: Manic Miner (which does the same thing, but the other way around), and 'mirror' versions of both games (in which all the screen designs have been laterally inverted).

Andrew's games make use of a remarkable number of tricks – both quirks of the original games that weren't normally seen and special effects that he has devised himself. As such, they're very clever and are designed with great precision – they push the game engine to its absolute limits.

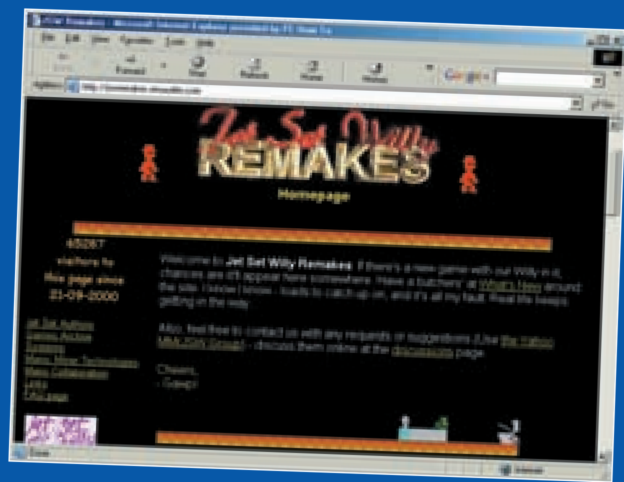
As seen on TV

The growth of the JSW revival has been so great that a TV programme has been made about it. In mid-2002, an Italian TV crew visited the houses of many of the authors of JSW clone games, myself included, to film us talking about our efforts. They were very friendly, and being filmed while walking along the street certainly piqued the curiosity of the neighbours. The film was scheduled for release in Italy and Finland in early 2003, though unfortunately I haven't managed to see it.

So, with a catalogue of over 60 games, vast libraries of technical documentation on the Web and even a TV documentary to its credit, it's clear that at the age of 21, Miner Willy has lost little of his former popularity. If you remember him fondly, grab your emulator and fire up some of the games mentioned in this article. If you think you're a master of the originals, you'll probably revise your opinion when you find out how challenging some of the new clones are. And if you're not a master player, that's fine, because most of the clones are designed to be fun, and fun is exactly what they are. RG*

>Web resources

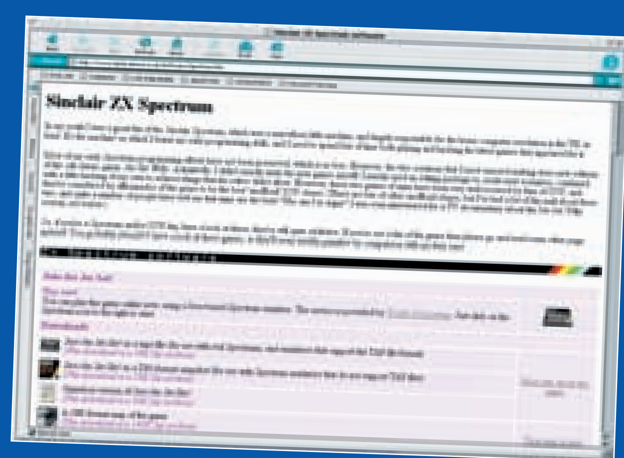
Andrew Broad has compiled a large collection of Web pages at **www.geocities.com/andrewbroad/spectrum/willy**. They provide technical details, links to every relevant resource and a lengthy page listing every known game variant, patch and development for Spectrum-based versions. There are also links to versions of the game for other platforms. All in all, it's a very comprehensive site with a vast amount of information, though it's all presented in text-only format without flashy graphics. For a more visually arresting site, Gawp's JSW Remakes site (**http://jswremakes.emuunlim.com**) is another comprehensive resource that was launched in 2000 to keep track of new JSW clone games. The site provides links to most of the available games, and, in the majority of cases, screenshots and short reviews.



Geoff Eddy's 'Geoff Mode' games and resources
www.cix.co.uk/~morven/jsw

John Elliott's JSW 128, JSW64, editor and technical info
www.seasip.demon.co.uk/Jsw

Richard Hallas' JSW games and resources
www.hallas.net/Software/spectrum.htm



Jonathan Harston's JSW editor and resources
www.mdfsnet.f9.co.uk/Software/JSW

Lee Tonk's Manic Miner remake and resources
www.geocities.com/SiliconValley/Lakes/6142

Spectrum Diamond TV documentary
www.opificiociclope.com/spectrumdiamond.html



Illustration by Susan Rowe

>The Next Level

Back in the mid 1980s, Level 9 Computing dominated the UK adventure game scene, with epic titles like Dungeon Adventure, Snowball and The Price of Magik earning accolades from the public and the computer press alike. The first part of Richard Hewison's extensive history traces Level 9's formative years, from its launch in 1981 to the release of its last dedicated 8-bit game five years later



Ladies & gentlemen, the Austins are floating in space...

Level 9 began life as a small family-run business. Brothers Mike, Nick and Pete Austin started the company back in 1981 in High Wycombe, Buckinghamshire, with assets of around £50 and a 16Kb Nascom computer. Their sister Margaret looked after the marketing and distribution side, and their father John was appointed as Managing Director.

Pete Austin studied Psychology at Cambridge University in the mid 1970s, and stayed on for another year to study Computer Science (as did his younger brother Nick, in London). As a student, Pete was heavily into role-playing games like TSR's Empire of the Petal Throne and the classic Dungeons & Dragons.

After finishing student life, Pete programmed accounting applications for a bank before moving on to a computer mainframe manufacturer. It was there that he discovered a version of the text adventure that is generally accepted to have started the genre – Will Crowther's Adventure (amended by Don Woods a year or so later). Pete played the game from start to finish in a fortnight during his lunch breaks. It was a game that was going to heavily influence Level 9 Computing in the years to come.

The adventure begins

Level 9's first commercial products were a mix of arcade games and utilities for the Nascom: Missile Defence; Bomber; Space Invasion; Asteroids (written by Steven Weller); Galaxy Invaders; Super Gulp; Compression Assembler (a full Z80 assembler which used advanced compression techniques); and Extension Basic (which added more keywords to NASCOM basic). The odd one out was a pseudo-adventure game called Fantasy, which had characters reacting to the actions that the player typed in.

Classified adverts were placed in Computing Today magazine and orders were saved individually from the computer onto cassette and sent by post. Level 9 also branched out into programming titles for the BBC Micro – Forth and Forth Toolkit.

Pete Austin believed that they could fit a version of the original Adventure game onto the 16Kb Nascom, so he devised an adventure writing system to do the job. Mike then wrote the game using his own 'a-code' – an efficient interpretation language. Finally, Pete wrote some text compression routines that allowed them to cram as much text as possible into the available memory.

It took Level 9 almost a year to create the tools and produce its first adventure game, which was called Colossal Adventure.

The plot involved rumours of incredible riches and untold danger within Colossal Caverns. Most people considered the cave to be a myth, the product of a fevered imagination, but every year a handful of people would set out to find the cave, driven by necessity or overwhelmed by greed. Most returned empty-handed with tales of volcanoes, dragons, gigantic snakes and the like, but some never returned, and speculation remained that they were the successful ones who found enormous wealth, or died trying.

Level 9's Colossal Adventure wasn't a direct conversion of Will Crowther's original. The food was moved into the otherwise superfluous forest locations outside the caves, and extra rooms were added. In the original, the game finished when you picked up the final treasure and the cave announced that it was closing down. You then had to get out as fast as you could. Level 9 decided to add another 70 rooms (involving the rescue of some elves caught inside the cave) so it could boast that the game had "over 200 locations" – a phrase that would reappear on the packaging of future releases.

An example of Godfrey Dowson's painting, used to great effect on later Level 9 releases



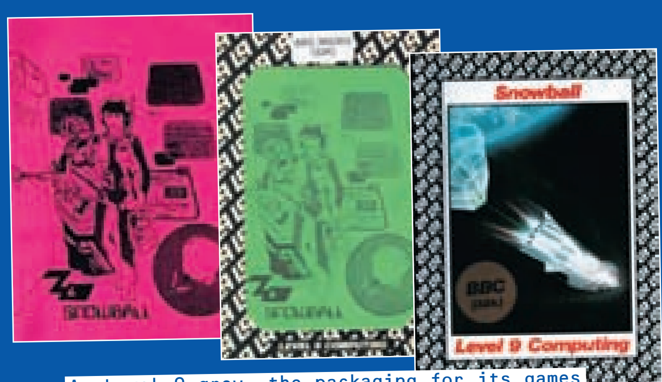
>Case study

Level 9's packaging changed considerably over the first few years. The initial version of Colossal Adventure was distributed in a re-sealable plastic bag that included an eight-page manual, an advert for its other releases and a clue request card complete with its own envelope. The envelope was illustrated with a drawing of a man holding an olive branch in his hand and a bird flying towards it. The words "Fly back with a clue" were printed in the top left-hand corner. The clue card was initially for individual questions. Only later on did Level 9 start offering complete and comprehensive clue sheets.

As Level 9 branched out onto new formats, the packaging was updated during 1983. Gone were the plastic bags and in came the cardboard boxes with cutout windows on the front, showing the cover of the manual inside. Distinctive black & white L9 logos covered the border of each box. The manuals were also colour-coded for each different machine version. 32Kb BBC manuals were printed with a green cover, for example; Spectrum 48Kb in orange.

The following year was to see another change to the packaging, with black plastic wallets replacing the cardboard boxes. Each wallet was adorned with a colour illustration on the cover, again surrounded by dozens of the (by now) famous black & white L9 logos. Inside the wallet was a transparent pocket that held the manual and clue request on the left, with space for the cassette or disk on the right.

Later still, Level 9 commissioned artist Godfrey Dowson to provide new cover artwork for its entire catalogue of titles. Dowson was a self-taught artist who had an interest in fantasy and magic. His first few paintings (created in inks and gouache) included Red Moon and Emerald Isle – two of Level 9's 1985 releases. The manuals also changed from A5 booklets to instructions printed on the back of a foldout A3 colour poster, showcasing more of Dowson's artwork.



As Level 9 grew, the packaging for its games became more professional year on year

Level 9's second title was Adventure Quest, which was a direct follow-up to Colossal Adventure. The plot was set hundreds of years after the events of the first game: the land had become tranquil, and the last of the elves had long since departed after their rescue from the dungeons below Colossal Cavern. But a drought in the north brought crop-failure, followed by attacks from maddened wild animals and as a result, the people fled to the south. An unseen enemy decimated troops sent back into the north, and finally an army of Orcs invaded, commanded by Lord AGALIAREPT – a Demon Lord renounced for his ferocity and skill in battle.

Adventure Quest was a landmark game for the Austins, as it was their first attempt at designing an adventure game from scratch. As they would prove in



Level 9's Middle-earth Trilogy. The three games were later released in a single pack entitled The Jewels of Darkness

future games, they often drew their inspiration from existing myths and legends. For example, according to occult texts, the evil Lord AGALIAREPT was a Hebrew demon – a servant to Lucifer no less. And as for Orcs and Elves, Tolkien's Lord of the Rings was an obvious influence.

Snowball's chance

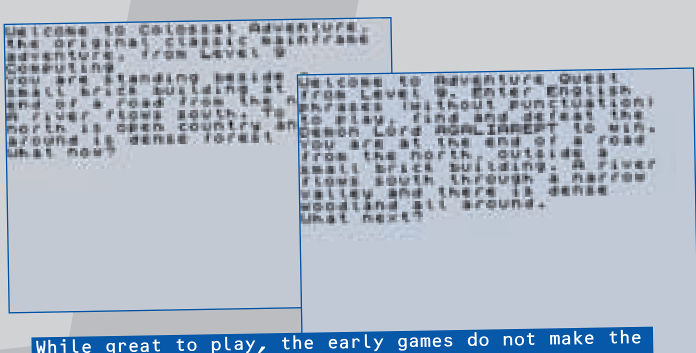
For its next release, Level 9 turned to a different type of fantasy: that of science fiction. Snowball was set in the year 2304 and cast the player as secret agent Kim Kimberley, whose mission was to prevent the interstellar transport ship Snowball 9 from crashing into a star.

With around a third of its adventure sales being credited to female players, Level 9 deliberately chose a sexless name so that the character could be perceived as male or female. Interestingly, a credit at the end of the game refers to 'Ms Kimberley', but that is the only clue that she might have been female.

The game boasted an amazing 7,000 rooms, although this was slightly misleading as the vast majority were found in a huge colour-coded maze. The remaining rooms were spread throughout the spaceship on various levels, accessed by lifts. The game began in the dark, inside a sponge-lined coffin. Not long after awakening from cryogenic sleep, the player was soon puzzling over how to avoid the killer nightingale sentry robots that roamed the ship.

Thanks to signing up with Microdeal (a major UK software distributor), Level 9 was faced with an enormous order in the run up to Christmas 1983. The Austins had to recruit as many of their friends and family as they could to meet the demand.

Snowball was quickly followed by Dungeon Adventure, a direct sequel to Adventure Quest. The three games were now referred to as the Middle-earth Trilogy. The story picked up just a day after the defeat of Lord AGALIAREPT, but thoughts had already turned to ransacking the Lord's own hordes of treasure, held within the Black Tower. The player set off on their journey, but within one mile of the tower, a spell caught them off-guard, and they awoke the next morning robbed of all their provisions and floating on the river by a bridge.



While great to play, the early games do not make the best screenshots!

Branching out

Up until this point, Level 9 only produced titles for the BBC Model B, Spectrum and Nascom machines. Thanks to the way the adventures were created, writing versions for other machines was a relatively straightforward process, so the Middle-earth Trilogy was soon ported to the Commodore 64, Oric, Atari 400/800, Lynx and RML 380Z in 1983. Later on it also converted the entire 8-bit range to the Amstrad CPC, MSX and even the Elan Enterprise.

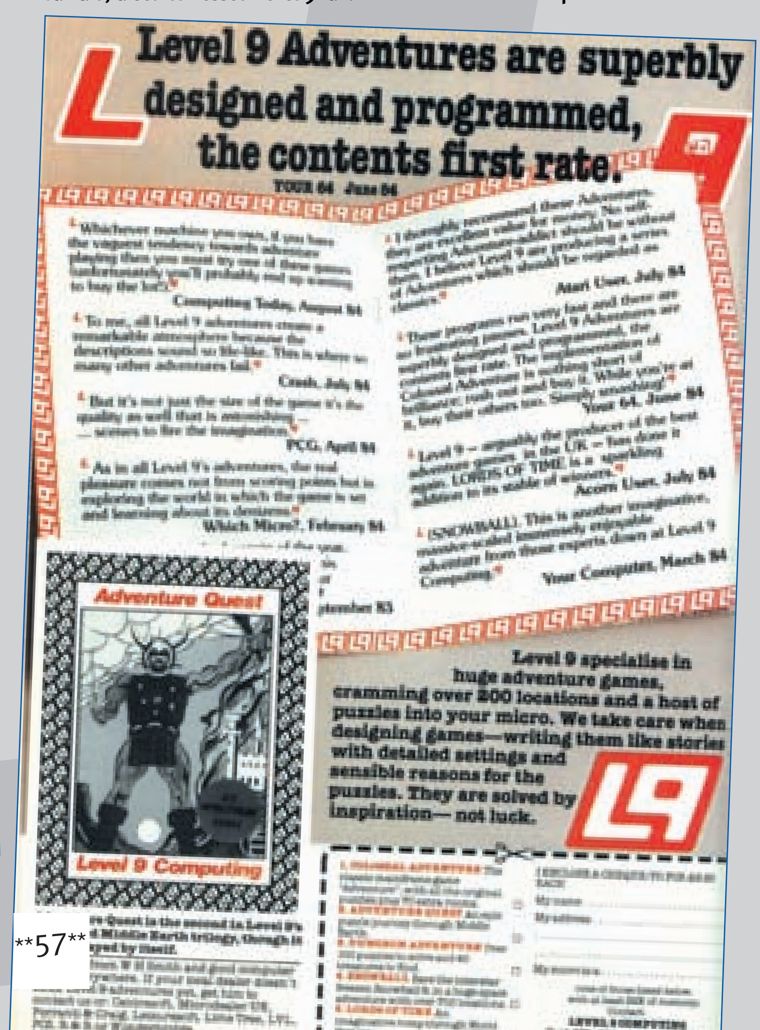
For its next adventure, Level 9 turned to a game designed by Sue Gazzard, a self-confessed Level 9 fan.

After tinkering with the initial premise (which was called Time Lords during its early development), the game was eventually released as Lords of Time. As with most of Level 9's titles, there were numerous references to the number nine throughout the game, the most obvious being the nine time zones that had to be explored to complete the quest.

Level 9 had always planned to return to the Snowball universe and the sequel was duly published in late 1984. It was titled Return to Eden and proved to be a tough but very rewarding game to complete. Having saved Snowball 9 from destruction, Kim Kimberley was framed for murder (hijacking was added to the list of crimes in later versions). Escaping to the dangerous world of Eden, Kim had to survive the radiation, endure the weird plant and animal life, explore a robot city and save the planet!

Return to Eden contained a number of subtle political and religious statements embedded into the design, along with some tricky puzzles. As with most of its games, there were also references to previous games. For example, typing some of the magical words from Colossal Adventure (like 'plover' or 'xyzzy') usually elicited a response or two!

Mike Austin implemented the





The Commodore 64 version of Eden featured better graphics, and an easier-to-read font

game, with help from Chris Queen. Inspiration for the story came from a number of science-fiction novels, including A Spell for Chamelion by Piers Anthony, Deathworld 1 by Harry Harrison, Hothouse by Brian Aldiss, I, Robot by Isaac Asimov and John Sladek's short story, Broot Force.

Return to Eden also marked a turning point for the Austins. Apart from an updated version of Mike's 'a-code', they also took the brave decision to add graphics to each and every location on all formats with more than 32Kb. Other companies had adventures illustrated with a few location graphics, but the Austins decided to go much further. Using their expertise in compression techniques, they found a way of squeezing a location graphic into a tiny amount of memory (sometimes as little as 40 bytes per picture).

The graphics consisted of component parts – rocks, trees, etc – which were added together to build up a picture. On the Spectrum, the usual colour attribute problems made the graphics look messy, but they looked acceptable on the other formats. The size of the graphics window varied from format to format. For example, the Spectrum version had a window that occupied the middle third of the top half of the screen, whilst on the Commodore 64 it filled the whole top half of the display.

The addition of graphics by Tim Noyce (and in later games, by James Horsler) made good commercial sense at the time, but it did upset some of the text-adventure purists. Although the images weren't brilliant, they did add a welcome splash of colour to the display and imbued the games with a certain ambience.

Rapid expanse

Increasing sales during 1984 led to a company re-organisation and the recruitment of new staff. Disk versions began appearing for the first time on the C64 and BBC, and the Austins were writing games for the latest additions to the home micro boom, the Amstrad CPC and the lesser-known Memotech machines.

But success came at a price. Pete Austin became so swamped with clue requests (sometimes as many as a hundred a day!) that he had no time left to design the games. The solution (if you excuse the pun) was simple: instead of trying to resolve individual problems, he created comprehensive clue sheets that covered the entire game in one go. They were written in such a way that the reader couldn't accidentally stumble upon the answer to a puzzle they hadn't yet encountered.

Having tested the water with its first illustrated game, Level 9 went into overdrive with a collection of four more graphic text adventures in two years. The price range varied according to the size and difficulty of the game. The first of its cheaper (£6.95 instead of £9.95) and slightly easier games was Emerald Isle. As with Lords of Time two years previously, it was designed by a Level 9 interloper – Shaun D. Abbott. The game began with the player hanging from a tree on a secluded island somewhere in the Bermuda Triangle. Trapped in an entangled parachute, the player is immediately faced with a life or death situation. Having survived the drop to the ground, the player then explored the island, entered a city and discovered a competition where the prize was to become ruler of the island! The game design originally included a cannibal sequence (complete with cooking pot), but this was removed for fear it might have been considered racist.

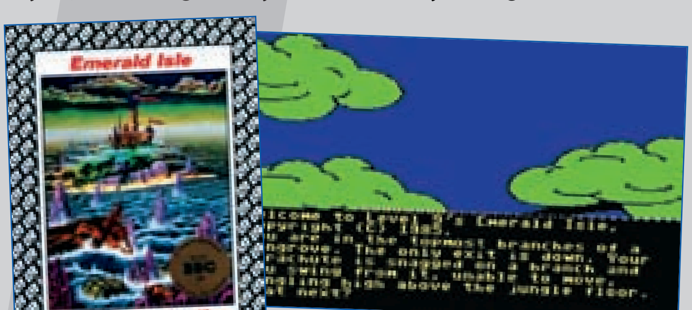
The graphics in Emerald Isle were similar in style to the system employed in Return to Eden. The Spectrum version got full-width graphics this time, instead of the smaller window that had been employed in Return to Eden. When the player completed Emerald Isle, they were told to look out for Red Moon and The Price of Magik, described as "later games in the same series". This fact was conveniently forgotten a few years later, when it was Lords of Time that was combined with Red Moon and The Price of Magik – but more on that later.

A kind of magik

Red Moon was released in the summer of 1985 and published at the cheaper price of £6.95. The theme of 'magik' was strong in Red Moon. This fantasy adventure introduced some basic role-playing statistics into the mix, with the player and other creatures having 'hit' points that reduced during combat. Once again, some of the adventure purists didn't like this addition, but it certainly didn't seem to harm reviews or sales.

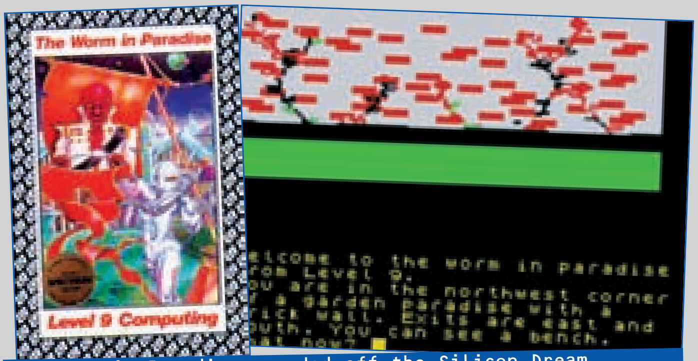
David Williamson and Pete Austin designed Red Moon, and Simon Aspinall helped Pete to implement the game. Influences on the game design included the tabletop RPG RuneQuest. One key design element was that iron inhibited the use of magik. Therefore, if you were carrying anything made of iron or were in the same location as something made from iron, you were unable to cast any spells. Unfortunately, the game treated the save game feature as a spell, so if you were carrying iron, you couldn't save your game position.

Unlike previous Level 9 releases, you could complete Red Moon without getting close to a full score. Apparently, this was a deliberate design decision to enable more players to finish the game.



Emerald Isle was the first of Level 9's games to be released at a lower price





The Worm in Paradise rounded off the Silicon Dream trilogy in fine style

The release of Red Moon in July 1985 began Level 9's most intense release schedule yet, with a new game appearing approximately every six months. Late 1985 saw the release of the concluding chapter in the Silicon Dream Trilogy. Following Snowball and Return to Eden, The Worm in Paradise wrapped up the series in fine style. Set 100 years after the events in Eden (during the reign of the 'Third Kim'), Worm was by far the most serious game that Level 9 had released, with many political themes sprinkled liberally into the design.

The Worm in Paradise placed the player back in Eden, which was now a benevolent bureaucracy. With a 15-hour working week, full employment and no crime, it sounded like a true paradise, with billions of citizens living in domed cities, supported by millions of robot servants. The government didn't tax its citizens, managing to generate funds through alternative means. The police made a profit by creating fines for almost everything, and the health service also made a profit by charging citizens for basic health care. Citizens could be rewarded for acting as informants on criminal activity or on other citizens with infectious diseases.

Worm was also the first game to be written using the third version of the a-code system. This now included a 1000+ word vocabulary, an advanced parser, improved text compression (better than 50%), a type-ahead facility and multi-tasking, so the player didn't have to wait for the pictures to be drawn before issuing commands via the keyboard.

The game began with the player standing in a brick-walled garden with no obvious means of escape. Picking a rotten apple from a nearby tree and biting into it released a worm that grew larger and larger as it crawled away. The player had to chase the worm, which crashed through the brick wall and escaped across sand dunes to freedom.

This beginning turned out to be a symbolic dream, which ended when the player climbed onto the back of a sleeping behemoth in the desert, used one of its scales as a shield and tackled the acid-spitting worm head on! Once the dream was over, the player removed their visor, left the Dream Alcove and began exploring the city.

The puzzle that defeated many players was the infuriating Enoch Transport System. This was a giant hub made up of different coloured segments. The player had to navigate this system to reach various locations, like shops, job centres, travel agents, etc. Unfortunately, the route through the transport system to reach these locations changed every time the game was loaded.



Price of Magik turned out to be Level 9's last 8-bit-only adventure

Even if the player did manage to work out the system, there were plenty of other problems to thwart them. Curfews meant that they had to be back in their Habihome before a certain time, or else the Fuzbots (police) would get them. Falling into debt was also a major obstacle to finishing the game, and there were plenty of opportunities for getting fined – usually related to failing to gain or complete jobs. As the plot progressed, the players found themselves taking jobs, joining political parties and exposing a fake alien invasion!

End of an era

What turned out to be Level 9's last 8-bit-only game was released in mid 1986, just six months after Worm. The Price of Magik was the sequel to Red Moon and it continued the same themes: a crazed magician called Myglar had succumbed to the terrible price of magik, and it was the player's task to defeat him whilst somehow avoiding the same fate.

The Price of Magik was another enjoyable and atmospheric adventure with dozens of objects and 200-odd locations to explore. It also had a nice twist at the end: when the player had defeated Myglar, they were given the option of a good or bad ending. In the good ending, the future showed that they would live in a luxurious castle and rule wisely; in the bad ending, their quest for magik turned them stark-raving mad, and they ended up in a mental asylum.

By now Level 9 was at the pinnacle of its achievements. Exceptional adventures were still being crammed into a minimum of just 32Kb, and machines with a little more RAM were getting pictures with every location. In the eyes of the press and the fans, it could do little wrong. But with the emergence of the 16-bit machines, the Austins were about to find out that the industry moved fast and gamers were often fickle. The Level 9 story concludes in next month's magazine... RG*

>Bookware

Level 9 produced a number of licensed games for publishers during the mid 80s. Mosaic Publishing was well known for releasing games based on novels. In the past, it had released a number of book-related games including The Pen and the Dark, The Snow Queen and Twice Shy. It signed Level 9 to base an adventure on a book by Terry Jones called The Saga of Erik the Viking (later a film directed by Jones himself). Pete Austin found writing a game based on a book a pleasant change from creating original adventures from scratch.

Erik was followed by The Secret Diary of Adrian Mole (based on Sue Townsend's book) and a game based on the Radio 4 country soap opera, The Archers (with text provided by the series' own script writers, for that authentic Ambridge feel). A second Adrian Mole game was created by Level 9 and released by Virgin a year or so later.

Although these games looked like adventures, only The Saga of Erik the Viking was a traditional Level 9 illustrated text adventure. Both Adrian Mole tie-ins and The Archers were multiple-choice games, with the player simply typing a number to choose what to do next. This approach was presumably chosen to appeal to younger players (who wouldn't want to type in commands). It obviously worked for the first Adrian Mole game, which clocked up sales of over 165,000 copies.


Examples of level 9's licesnsed work. Only Erik was a true text adventure


RETROTRONIC



>Construct Your Own Coin-op

Want to relive retro arcade machines as authentically as possible? As Dave Cusick explains, there's no substitute for having a six-foot tall arcade cabinet in the corner of the living room

Most of the Retro Gamer team grew up during the 1980s, in the glory days of arcade machines. We remember the smoky atmosphere of gloomy amusement arcades, summer evenings spent pumping 10-pence pieces into classic coin-ops, with hordes of kids standing admiringly around to watch the kid who held the Galaxians high score stretch his record that little bit further. They really <I>don't<D> make games like that any more.

As kids, we all wished we could own our favourite arcade machines, but of course we had neither the cash nor the space to make these dreams a reality. As fully grown adults, most of us still haven't got the cash or the space, but we're less prepared to let small obstacles like those stand between us and retro-gaming bliss. Game on!

Over the next few pages, we're going to show you how to construct not one, but two fully functional retro arcade gaming systems. (You'll have to supply your own crowd of admiring kids, we're afraid, but we're more than happy to supply all the knowledge you'll need). First, we're going to build an upright cabinet from scratch, using MDF and a pre-built control system. Then we're going to assemble a cocktail cabinet system, using an off-the-shelf kit and a hand-built, wired control panel.

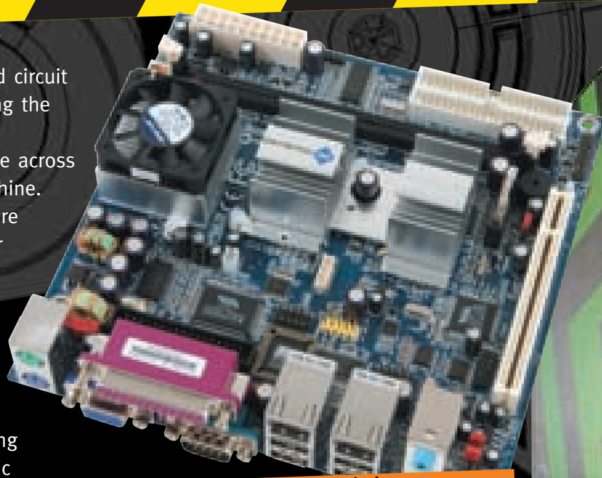
Build or modify?

For the cabinet itself, there are two paths you can go down: you can buy an arcade machine and modify it; or you can build your own cabinet completely from scratch.

If you want to buy a cabinet to modify, there are several ways in which you might be able to pick one up. One is to scour eBay, another is to ask around any amusement arcades in your area. Unless you get lucky though, you're unlikely to turn up much with either of these approaches, so a better bet might be to contact a company which sells old arcade machines, such as Arcade Warehouse (see the Useful Links section for the relevant Web addresses.)

Old cabinets come in two flavours: dedicated machines and generic machines. Dedicated machines were cabinets built specifically for one game, such as the colossal sit-down Afterburner machines or those multiplayer Daytona Rally things you'll still find in many arcades today. These often have elaborate control systems, force feedback or other special features. Generic machines were built to play a whole range of games, and could be switched over simply by inserting a new arcade PCB (printed circuit board) and changing the game name in the illuminated marquee across the top of the machine. Generic machines are available in one- or two-player formats, with each player provided generally with either three or six fire buttons.

If you're shopping around for a generic cabinet, you'll come across the term JAMMA which stands for Japanese Amusement Machine Manufacturers Association. A JAMMA cabinet is one which has a standard interface, so any JAMMA cabinet can play any game which comes on a JAMMA board. There are a couple of things to watch out for though. Firstly, some JAMMA machines have vertically mounted monitors, as used by a lot of the older arcade games, whilst some have horizontally mounted monitors, as used by the vast majority of games manufactured in the last 20 years. Secondly, some JAMMA cabinets provide only three fire buttons per player, whilst others provide six, and it's no good trying to play a game which requires six fire buttons (such as Street Fighter II) on a JAMMA machine which only provides three fire buttons per player! We're not going to cover JAMMA in great detail here, but if you're keen on exploring this avenue then check out the PC-to-Jamma Project website and pay a visit to the JAMMA+ IRC channel or Web forum.



VIA's EPIA CL motherboard is more than powerful enough to run MAME



Not much cop at woodworking? You can buy flat-packed kits from several companies, such as this ArcadeDepot kit, which is supplied in the UK by GremlinSolutions

Of course, if you buy an old machine and it's in good condition, it's a shame to rip it to pieces. In truth, most old arcade machines have had a tough life and will probably be in need of some tender loving care.

After weighing up the pros and cons, we decided to build our upright arcade cabinet from scratch. Plenty of enthusiasts go down this route, and you don't need to be a woodworking expert to do it either. We're going to build the cabinet from 12mm (0.5in) MDF (Medium Density Fibreboard), reinforced where necessary with wooden batons.

We designed the cabinet ourselves, basing it on our memories of upright arcade cabinets, working to our own dimensions, and making bits of it up as we went along. The key thing to bear in mind is that your cabinet will need to be big enough to accommodate the relevant hardware. Make sure you measure the width, height and depth of the monitor or TV you'll be using to ensure there's sufficient room for it inside the cabinet.

If you don't feel confident enough to design your own cabinet, there are a number of websites which will provide (or sell) detailed cabinet design plans. Alternatively, you can buy assemble-it-yourself flat-pack cabinet kits. Upright cabinet plans are available from MAMEroom or GameCab, and MAMEroom also sells flat-packed, upright cabinet kits. We're going to use a cocktail cabinet kit, kindly supplied by GremlinSolutions, as the basis of our second retro arcade machine.



The technical stuff

At the heart of both our systems will be a PC running arcade emulation software. There are several arcade emulators around,





There are loads of MAME front ends available, but Dave Dribin's Game Launcher is one of the most versatile

but the most famous (and the one which is capable of running more games than any other) is MAME – the Multiple Arcade Machine Emulator – so that's the one we're going to use for our cabinet.

The PC in a retro arcade system doesn't need to be powerful, since it's running games between 15 and 25 years old. We're going to use some VIA EPIA motherboards – a CL 10000 board in the upright cabinet, and a V5000 in the cocktail table. EPIAs are small motherboards with on-board graphics and sound capabilities, and pre-installed processors. They're quiet, don't generate too much heat, and are extremely compact. You can buy EPIAs brand new from Mini-ITX.com for between £75 and £150, depending on the exact model.

To the EPIA board in our upright cabinet, we'll add a dedicated sound card, because we're going to stick a decent speaker system and subwoofer inside the cabinet, and the on-board sound probably wouldn't do this justice. We'll also add 256Mb of memory to each system, plus an old 4Gb hard disk (more than big enough for our purposes). We'll need a CD-ROM drive during the setup process, but this will be removed later. No floppy disk drive will be necessary.

If you're building a system around an old arcade cabinet, you may already have an arcade monitor. If you're building from scratch, you might be able to pick up an old arcade monitor from somewhere, but it's probably more likely you'll have to settle for either a TV or a PC monitor. We're going to use standard 17in PC monitors in our cabinets.

Software

Our system is designed to run MAME, because it's the most popular and well-supported arcade machine emulator in existence. MAME is a free download, and it enables you to run thousands of classic coin-op ROM images. ROMs are available for download all over the Internet, but it's illegal to use ROM images unless you have the creator's permission to do so, or already own the original arcade PCB (in which case your ROM image could be regarded as a backup). Fortunately there's now a website which sells legal ROMs from classic Atari games – it's called StarROMs, and it enables you to pick up cracking titles such as Asteroids, Centipede, Missile Command and even Tetris for only a few quid.

Before installing MAME though, we're going to need an operating system. MAME is available in several different flavours – DOS, Windows, Linux etc – and your choice will most likely be influenced by their relative cost and ease of use. Linux is free but can be brain-numbingly complicated at times; DOS is plain nasty, and you won't find DOS drivers for most modern PC hardware (such as our EPIA motherboard); so we're going for Windows Me. This will make our lives a lot easier because Windows Me comes on a bootable CD, which means we won't need to use a floppy drive at any point.

Explaining in detail how to set up a new PC system is a bit beyond the scope of this article, but here's the process in brief. With all your hardware connected, enter the PC's BIOS (usually done by pressing DEL during bootup) and set the CD-ROM as the boot device. Restart with the Windows Me CD in the drive, and after a couple of minutes of drive churning you'll be presented with the Windows installation program. Choose to install Windows Me on your hard drive, formatting the drive in the process, then sit back and wait. You'll need to answer some questions at various points during the installation, so don't go too far away.

Once Windows has finished installing itself, install the drivers provided with your motherboard, and drivers for any additional devices you have included in the system (such as the Creative



We're using the X-Arcade in our upright cabinet to save time, effort and money

SoundBlaster sound card we're using). And there you go – an all-new system, ready and waiting for you to install your application software.

The next step is to download the MAME distribution archive from the Net, and extract its contents to your hard drive. Even in its Windows incarnation, MAME is a command-line tool, so ordinarily to run it you'll open a command prompt (by choosing Start/ Run, typing 'command' then hitting Enter), and then key in 'mame romname', where romname is the name of a ROM file located in the mame/roms folder on your hard disk.

To make using the cabinet more pleasant you'll doubtless want to employ the services of a MAME front end. This runs on top of Windows (so you need never see Windows itself), and enables you to switch easily between the games installed on the system. Most front ends let you use your arcade controls to make this selection, rather than the PC's keyboard or mouse.

There are dozens of front ends to choose from, ranging from simple but effective to ridiculously over elaborate. Most are free, so you can download a bunch and see which one works best for you. AdvanceMAME and ArcadeOS are probably the two most popular front ends, but there are some novel ones, such as 3DArcade which enables you to choose the game you want to play by navigating your way through a virtual amusement arcade… minus the smoke, dodgy geezers and change booths.



Ultimarc's IPAC controller is ideal for those looking to build their own control panels from scratch

For our upright cabinet, we're using Game Launcher. This is initially less user-friendly than the alternatives, but it's extremely versatile. It can easily be configured so that it can be controlled with a joystick and some fire buttons, which means we can tuck all the PC workings away inside the cabinet, only ever needing to be accessed when the machine needs turning on, shutting down and turning off. Game Launcher also works with a variety of emulators besides MAME, so there's potential for future expansion of the system without having to start all over on the software front. Configuring Game Launcher is easy; it involves editing some text files to include the list of your MAME ROMs, and to tell the program which joystick movement or button presses you'd like to use to select games. We'll cover this in detail in our step-by-step guide later.

For the cocktail-table machine, we're using Cocktail Frontend. As the name suggests, this is designed specifically for us, in vertical screenmodes, and it's a doddle to configure, too.

The controls

Those who opt to modify an old arcade cabinet will obviously have some joysticks and buttons available. A way is still needed of getting these to 'talk' to the PC at the heart of the system.

In the early days of MAME (the late 1990s), people building their own arcade cabinets had it tough. The only way to get the PC to recognise arcade joystick movements or button presses was to perform a keyboard hack – in other words, split apart the PC keyboard and hard-wire the arcade controls to particular keys, so that when the joystick was moved or a button pressed, the computer would think that a key on the keyboard had been pressed instead. Keyboard hacking worked to a point, but it was fiddly and time-consuming. Not only that, but because of the way in which keyboards are manufactured, 'ghosting' was a common problem – this is where one key (or hard-wired button) is pressed but one or more other keys (or buttons) also register at the same time. Clearly, if you've got ghosting problems then you're not going to have the most enjoyable gaming experience.

Fortunately, keyboard hacking is no longer necessary. There are now a number of arcade-controller-to-PC interfaces available from companies such as Ultimarc in the UK and Hagstrom Electronics in the US. You can wire your arcade controls to one of these interface cards, slot the card into your PC, and Bob's your mother's brother – everything should work perfectly and without any ghosting.

If you want to build an authentic control system from scratch using one of these interfaces, you can pick up a variety of joysticks, buttons and other controllers from Ultimarc, or from Happ Controls in the US – both stock a great range of products. Check out the Arcade Controls website for loads of helpful advice on constructing your own control systems, and take a look at our cocktail cabinet step-by-step guide to see how we've done it using controls



Sites such as ClassicArcadeGrafix supply reproduction prints which you can stick to your cabinet if you don't fancy designing your own graphics



and an I-PAC interface obtained from Ultimarc.

If you don't fancy going through the trouble of designing your own control system, there is a much simpler alternative – buy a ready-made arcade controller. There are a few good ones to choose from nowadays, including the HotRod, various products from Ozstick, and the XGaming X-Arcade which is available in one- and two-player versions. These products typically connect either to a USB port on the back of your PC, or to the PS2 keyboard socket (with the keyboard then connecting to the controller, so that you can still use it when required). For our upright cabinet, we're going to use the two-player version of the X-Arcade, which you can pick up in the UK from GremlinSolutions for £99. It's got bags of buttons, it's sturdily built and it'll save us lots of soldering and wiring. We've based the cabinet dimensions around the X-Arcade, so that it'll fit snugly and securely at just the right height for optimum gaming fun.

Finishing touches

Cocktail tables have a certain chic-ness, but a ruddy great upright cabinet isn't going to look too impressive in the corner of the living room. What's needed are some irresistible graphics for this cabinet's front and sides, and a stylish illuminating marquee to run across the top.

We got our esteemed art editor Mat Mabe on the case, and he whipped us up some custom graphics, which we then had printed onto adhesive vinyl by local signmaking company, Tunnicliffe Signs. They also supplied a suitable strip light for the marquee, and printed our designs onto Perspex for the marquee panel and the screen surround. Getting stuff like this done professionally isn't cheap, but it does guarantee that your cabinet looks the business when it's finished.

If you don't have your very own Retro Gamer art editor handy, don't despair – fire up your favourite PC paint package and have a play around. You can find loads of character artwork and original game logos to incorporate into your design at the Arcade Vector Graphics website. Combine a few elements from these and you shouldn't go too far wrong. If you don't want to go to the expense of having the designs printed onto adhesive vinyl, you could simply print them out with a standard inkjet printer and glue them onto the cabinet, then whack some transparent sticky-backed plastic over the top, or else use some sort of sealant to provide a hardwearing finish.

If you don't fancy your artistic skills, you've got a couple of options: you could buy some off-the-shelf reproduction prints from sites such as Phoenix Arcade or ClassicArcadeGrafix; or you could download some original arcade cabinet designs from the Arcade Art website and either print them yourself or get a local printing company to do it for you.

Useful links

Revamping old cabinets

Arcade Heaven www.arcadeheaven.co.uk
Arcade Warehouse www.arcadewarehouse.com
PC-To-JAMMA project www.mameworld.net/pc2jamma
JAMMA+ Web forum www.jammaplus.com/forum

PC component suppliers

Mini-ITX.com www.mini-itx.com

Cabinet plans and flat-pack kits

ArcadeDepot www.arcadedepot.com
LuSid's Cabinet plans http://users.adelphia.net/~seanhat/arcade
GameCab www.gamecab.com
GremlinSolutions www.gremlinsolutions.co.uk
MAMEroom www.cybertechdesign.net/mameroom

Cabinet graphics

Arcade Art www.localarcade.com/arcade_art
Arcade Vector Graphics http://vectorlib.free.fr
Phoenix Arcade www.phoenixarcade.com
ClassicArcadeGrafix http://classicarcadegrafix.com
Tunnicliffe Signs www.tunnicliffesigns.com

Arcade controllers

Gremlin Solutions www.gremlinsolutions.co.uk
HotRod www.hanaho.com/products/HotRodJoystick
OzStick www.ozstick.com.au
XGaming X-Arcade www.x-arcade.com

Building your own controls

Arcade Controls www.arcadecontrols.com
Hagstrom Electronics www.hagstromelectronics.com
Happ Controls www.happcontrols.com
Ultimarc www.ultimarc.com
Interactive Control Panel Designer www.move36omedia.com/mame/icpd/ICPD.htm

Legal ROMs

StarROMs www.starroms.com

MAME front ends

AdvanceMAME http://advancemame.sourceforge.net
ArcadeOS www.mameworld.net/pc2jamma/frontend.html
Cocktail Frontend www.mikebillings.com
Game Launcher www.dribin.org/dave/game_launcher

General help and advice

Emuadvice www.mameworld.net/emuadvice/main.html

Pre-built MAME cabinets

Game Cabinets Inc www.gamecabinetsinc.com
Let's Go Retro www.letsgoretro.com/classic_arcade_games.html
LoadsMoreStuff.com www.loadsmorestuff.com

Inspirational example cabinets

Andy Knosp's Cabinet www.knosp.com/projects/mamecabinet
MAME Cabinet in 24 hours http://rtcw.no-ip.org/cabinet/index.shtml
MAME Cabinet conversion www.bazpatts.f2s.com/cabinet.php
Cocktail Table Project http://underworld.fortunecity.com/fifa/294
Pac-man Cocktail Cabinet www.pharaohweb.com/pacman/hardware.html
Rayder's MAME/VP Cabinet www.ameritech.net/users/rayder/rayder.html
Rob's Arcade Cabinet http://cmdrtaco.net/jubei
Russ's MAME Cabinet www.russprince.com/cabinet
WeirdPier's MAME Cabinet www.weirdpier.com/cabinet

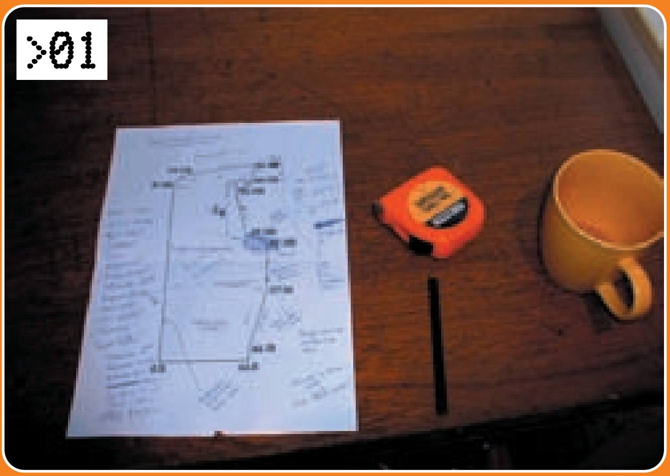
Build your own upright cabinet



Shopping list

6 MDF sheets, 1810x607x12mm (£50)
8 planed wood lengths, 2000mm long (£10)
Tin of wood filler (£8)
Tin of MDF primer (£8)
Tin of black gloss paint (£8)
Pack of two hinges (£5)
Case graphics (varies)
X-Arcade two-player controller (£99)
Custom graphics printing on vinyl and perspex (£200)
VIA EPIA motherboard (£135)
Suitable PC case (from £30)
256Mb RAM (£45)
Hard drive (from £40)
17in monitor (from £100)
PCI sound card (from £20)
Speaker system with subwoofers (from £50)
CD-ROM drive (only needed during setup)
Keyboard (£5)
Mouse (£10)
Operating system (varies)
Legal ROMs (from around £5 each)
TOTAL COST = from £828

>01



The first step is to plan the cabinet. You can find plenty of example plans on the Internet, but we've drawn up our own, taking our cues from the X-Arcade's width, the monitor's depth, and the fact that 12mm MDF is readily available in sheets that are 607mm wide and 1810mm tall (anything larger is too big to fit in a hatchback car!).

>02



Transfer your designs for the two sides onto a couple of sheets of 607x1810x12mm MDF. If the designs are simple you can mark both out using a tape measure; if they're complex, mark out and then cut one side, then draw round it onto the second sheet of MDF to ensure the two sides match up.

>03

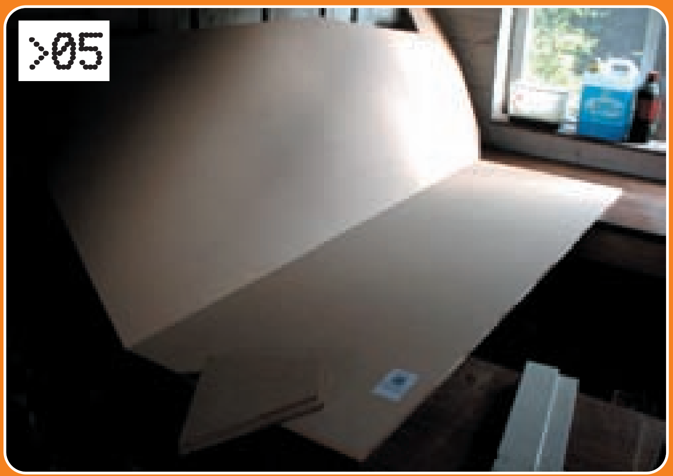


You'll probably find that when you've drawn things out at full size, they don't look quite as you'd envisaged them. Now's the time to make changes. We've refined our design so that the front doesn't stick out as much; the shelf supporting the X-Arcade is now much smaller and more elegant.

>04



Now it's time to start cutting. For curves or complicated cuts, use a jigsaw, but for straight lines you'll find it much quicker to use a circular saw. When cutting MDF, *always* wear a facemask and eye protection, because this stuff produces very fine dust which you don't want to breathe in or get into your eyes.



Here you can see one side, the back of the case and the two little controller shelf supports. We need a way of securely fixing the back of the case to the sides, and for this we'll use planed lengths of wood to create sturdy batons that'll hold everything together.



Screw two lengths of wood to the cabinet back. You'll need to drill holes through the MDF for the screws, and then countersink them so that the screw heads will be able to sit beneath the level of the surrounding MDF. This is so they can be filled over and concealed later. There's no need to pre-drill the wood batons.



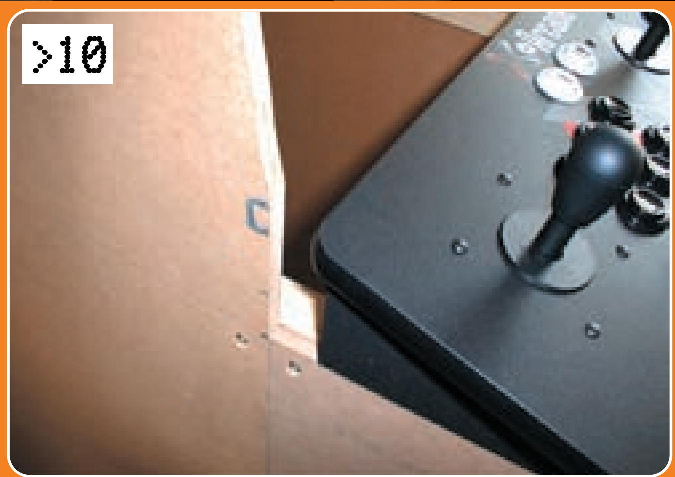
The baton gives us something solid to screw the side panel into. The back panel is the width of the X-Arcade, less the 24mm of the two side panels. When you're building the cabinet to such precise dimensions it's a good idea to regularly check that everything is matching up as intended!



With both side panels attached, we've added a wood length which will run horizontally in line with the top of the controller support shelf. Again, this is attached with screws coming through from the outside inwards. The shelf support is the wrong way around in this photograph, which we realised after screwing it – d'oh.



Now the cabinet can stand up for itself, so the workbench is whipped out of the way and we can get a feel for the size of the thing. In a moment we'll add some cross-bracing at the front to hold things firmly in place, but first we'll pop the controller into position to make sure the width is still spot on.



The top of the X-Arcade controller extends further back than the sides, so we'll drill out a notch in the side of the case so that the controller will fit snugly in place without an untidy gap behind it. As the old adage goes, measure twice and cut once – if you get this hole in the wrong place, it'll look untidy when the cabinet's finished.

>11



A cross-brace can now be added underneath the controller. Again, this has batons attached to it and we'll screw through the sides into these batons, holding the cabinet together and supporting the controller securely into the bargain. Although we've not done it yet, it's a good idea to drill into the cross-brace in two places, so it won't move around.

>12



It's worth adding an additional internal brace. Then it's time for a front panel, constructed in much the same way as the back panel. This doesn't come all the way up the front of the case, because we're going to add a door above it so that we can access the internal PC components when necessary.

>13



Two internal shelves are next one for the PC components and one for the monitor. These are supported underneath by batons screwed into the front and back of the cabinet. We've taken a chunk out of each shelf at the rear, to enable cables to be threaded through.

>14



Next, more cross-pieces are added at the top (directly above and below where the arcade cabinet's marquee will eventually live). At this point, the plan is to have the marquee attach to these wooden batons, so they're mounted flush with the front of the cabinet.

>15



Then it's time to add the rest of the roof, which again will be attached using batons screwed into the roof panels and the sides of the case. Competent woodworkers can mitre the edges of the panels so they fit snugly together; otherwise, keep the gap as small as possible so it can be filled later.

>16



The front door is next. This is a panel attached with a couple of hinges, with two wooden batons running across inside the case so that it doesn't spring back *too* far and end up inside the case. The handle is a standard draw handle, bought cheaply from a DIY store.



The two little triangles of MDF which support the control panel weren't sitting entirely flush with the cabinet sides, so here we've added some wooden batons to hold them securely in the correct position.



So that the whole thing can be moved around more easily, it's a good idea to add some wheels. We've screwed four furniture castors to a piece of MDF, which will then be screwed into batons attached to the cabinet sides. The sheet of MDF sits underneath the cabinet sides for extra support.



With a few extra wooden batons and screws here and there to lend the whole thing strength and stop anything from moving around, that's the cabinet construction finished. Now we're ready for the slow and boring part: preparing it for painting.



First, all those screw holes need filling. Ladle on a thick layer of wood filler. Don't try to get the surface smooth because you won't manage it the filling stage is about filling, not smoothing. Be sure not to skimp on the filler.



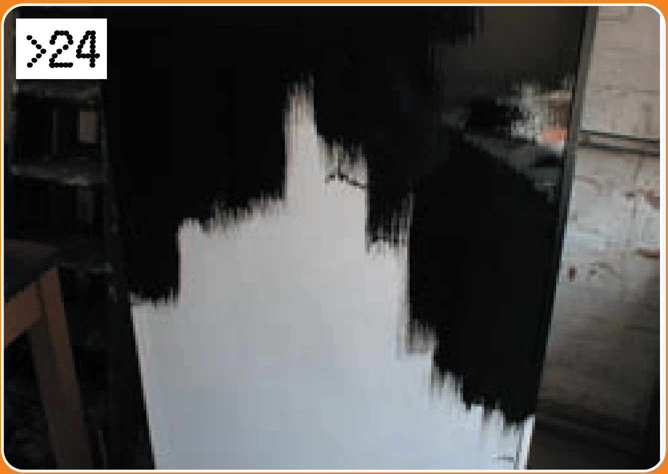
Now for the sanding. We strongly suggest you invest £15 or so in an electric sander because it'll make your life a hell of a lot easier. Make sure you wear a facemask and eye protection when you're sanding, because you don't want to inhale the wood filler and MDF dust or get it into your eyes.



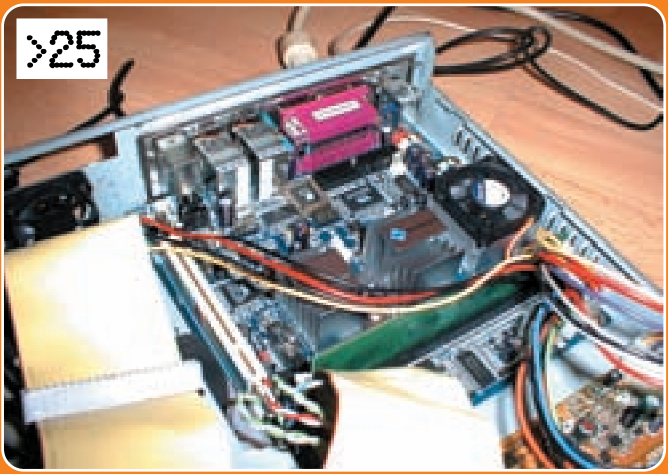
With the sanding complete, those screw holes should just be a memory. Before starting painting, give the cabinet a good dusting off and air out the room you're working in so that there's no dust floating around - this could prevent you from achieving a good paint job.



Apply at least one coat and preferably two of MDF primer to the cabinet before you whack on a colour. If you don't, the MDF will positively drink your paint and you'll have to apply several layers to achieve a decent finish. This tin of primer cost less than a tenner and provides more than enough paint for two coats.



Primer takes a couple of hours to dry. Then it's time for some shiny black gloss paint. Whack it on nice and thick   the biggest mistake most people make when painting is to spread the paint too thinly. Wait a good day or two after the first coat before applying a second.



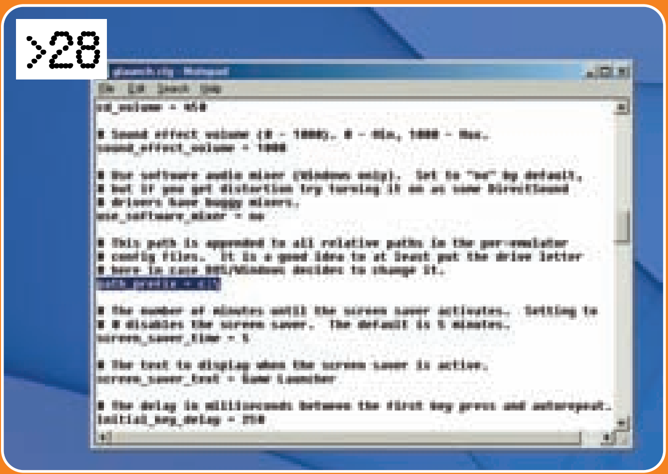
This is the PC which is powering our upright cabinet (minus the sound card which is yet to be added). It's advisable to check your PC works properly before installing it in the cabinet, as it's much easier to diagnose problems at this stage.



We've installed Windows Me from a CD-ROM, and transferred across MAME and our legal ROMs. Whilst you're at it, you may as well install and configure Game Launcher; the first step is to open glaunch.cfg using Notepad.

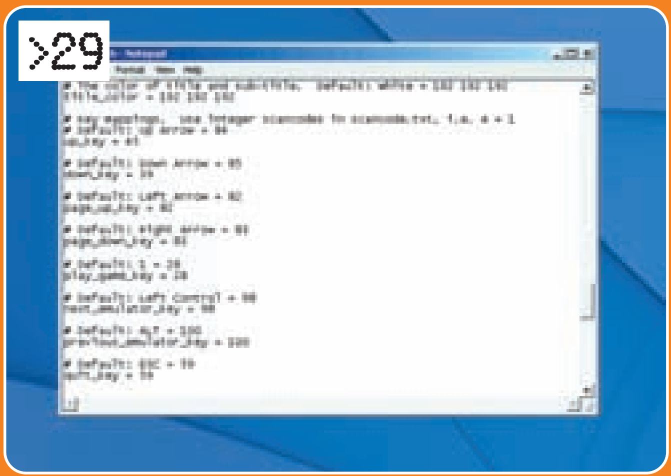


Find the line which says *emulators =* and remove everything except MAME, since this is the only emulator we'll be using initially. Then scroll down to *resolution =* and set this to your desired screen resolution – 800x600 is normally fine.



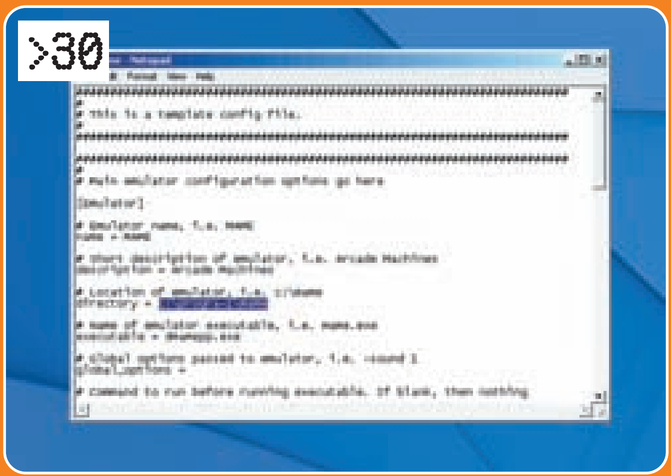
Further down, make sure that path_prefix is set to *c:*. Then scroll all the way down to the Key Mappings section. This is where you'll need to enter the scancodes for the keys that will enable you to control the menu with the joystick.

>29



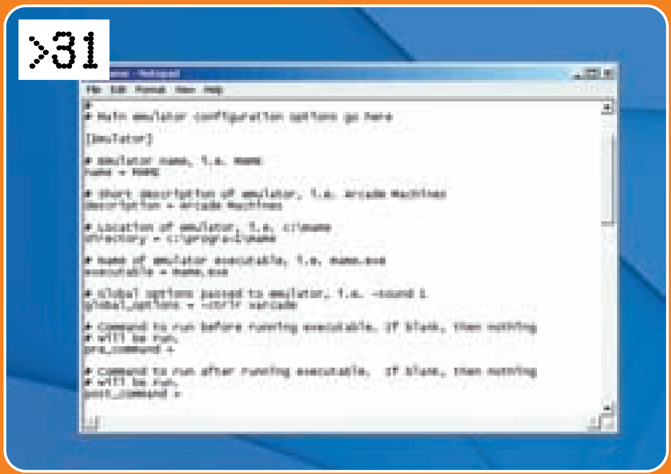
We're going to change the Up, Down, Left and Right keys to 45, 39, 82 and 83 respectively, and the Play Game key to 28 (the Player One Start button). You can find a full list of all the possible scancodes in scancode.txt, a text file that's supplied with Game Launcher.

>30



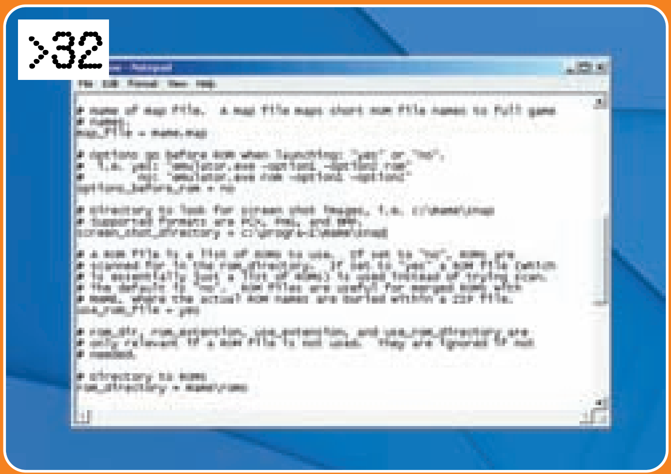
Save and close glaunch.cfg and then go into the Config directory. Open mame.cfg using Notepad. Here you need to set the directory of the MAME executable, using 8.3 filename convention (so if your MAME lives at c:\program files\MAME then you should enter *c:\progra~1\mame* here).

>31



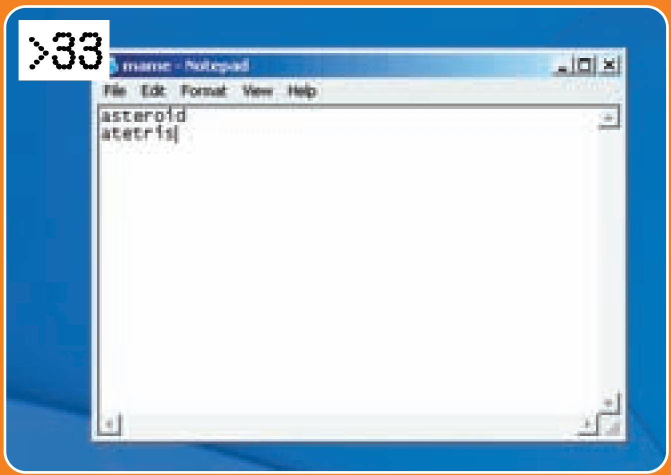
Next change the name of the MAME executable you're using (normally this is mame.exe). Under global options you can tell MAME that you'll always be using the X-Arcade change this so it reads *global_options = -ctrlr xarcade*.

>32



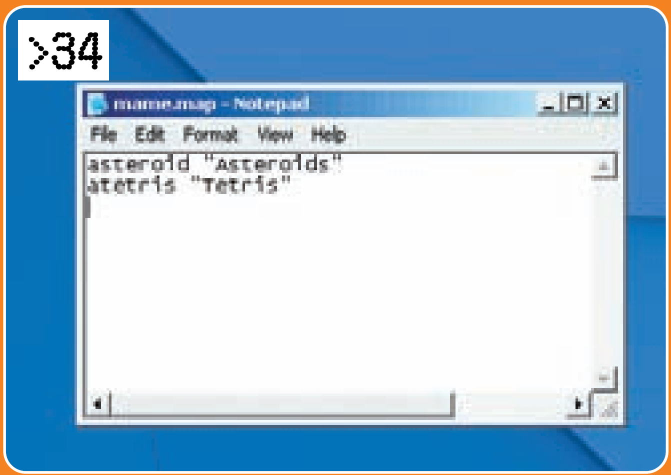
Change screen_shot_directory to *c:\progra~1\mame\snap* (or whatever). Ensure Use_rom_file is set to *yes*.You can then save and close mame.cfg. The next file which needs editing is mame.rom, so load this into Notepad.

>33



This file simply contains a list of the filenames (minus the file extension) of the ROMs you want to use with Game Launcher. The filenames are listed one per line: ASTEROID, ATETRIS and so on – to find the correct names, browse to your MAME/ROMs folder within Windows.

>34



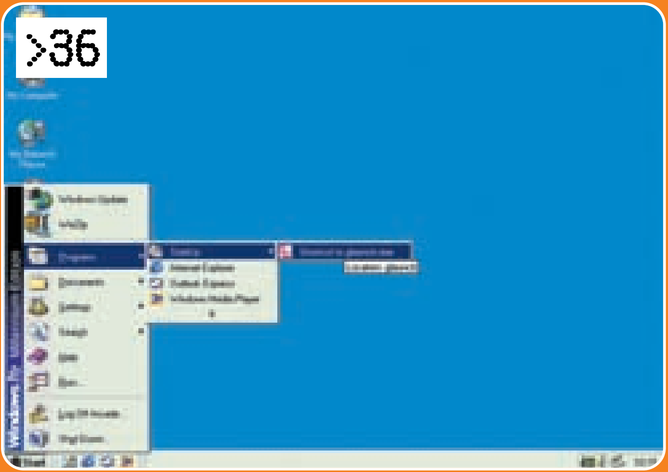
Having saved the finished mame.rom file, open mame.map in Notepad. This tells Game Launcher the names it should display for each of the ROMs listed in the mame.rom file. As an example, you might list *ASTEROID "Asteroids"* on one line, *ATETRIS "Tetris"* on the next, and so on.

>35



Save that file, then load up Game Launcher by double-clicking glaunch.exe, to check everything works properly. If prompted to type 'OK' when a ROM loads, waggle the X-Arcade's player one joystick left and right. To quit out of a game and return to Game Launcher, press the right side button and Player Two Start together.

>36



If everything works, create a Shortcut to glaunch.exe and drag this to your Windows Startup folder, so it runs every time the computer boots up. Then you need never see Windows at all – apart from when you want to turn the machine off, when you'll have to hit Escape on the keyboard and then shut down the system.

>37



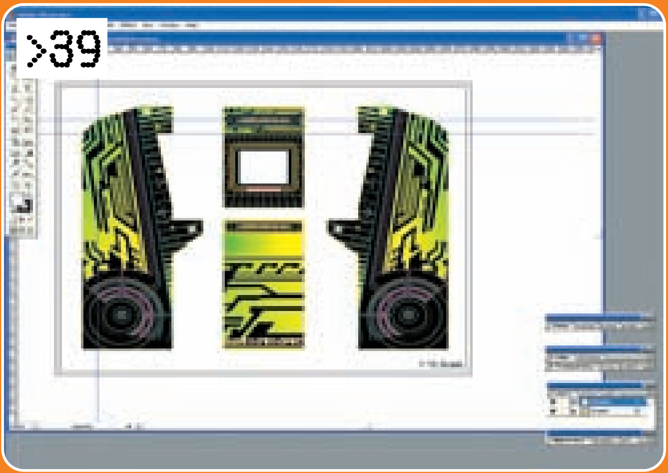
The PC fits neatly on the cabinet shelf, alongside the subwoofer (on the left) and a four-way power block on the right. We'll need all four outputs – one for the PC, one for the speaker system, one for the monitor and one for the cabinet marquee light. The trailing plug exits through the back of the cabinet.

>38



Here's the project so far: the cabinet's built and painted; the internals are in place and working; now all we're waiting for are the finishing touches such as the marquee, graphics for the cabinet sides and a perspex sheet to fit around the monitor screen.

>39



These are the graphics which will adorn the outside of the cabinet, as designed by Retro Gamer's art editor extraordinaire, Mat Mabe. We supplied this Adobe Illustrator file to local company Tunnicliffe Signs, and they manufactured and installed the graphics for us.

>40



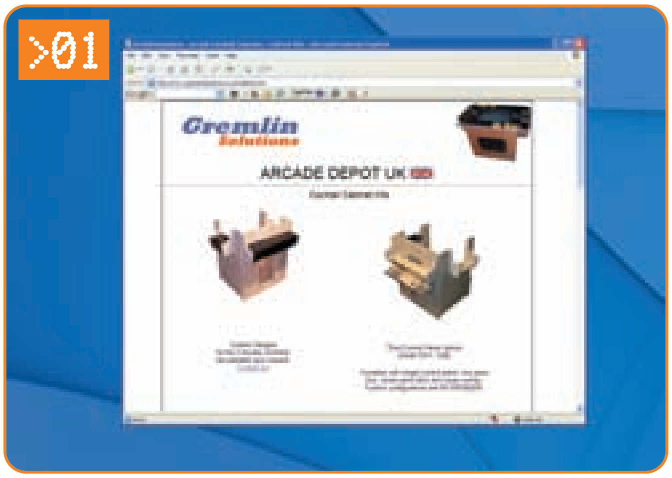
And here it is – behold: the Retrotronic! All that's needed now are a couple of bar stools, a few beers and snacks, and a clear diary. Oh, and some flowers for the missus wouldn't go astray as you attempt to convince her that this monster will look a treat in the living room!

Build your own cocktail cabinet

Shopping list

Oak cocktail cabinet kit (£280)
2 custom-drilled control CP2B control panels (£70)
2 eight-way JOY1 joysticks (£40)
12 buttons (£30)
12 microswitches (£30)
19in monitor bezel (£25)
Tempered glass top (around £75)
8 glass clips (£38)
Printed top underlay (£50)
IPAC interface (£40)
Wire (a couple of quid)
VIA EPIA motherboard (£135)
Suitable PC case (from £30)
256Mb RAM (£45)
Hard drive (from £40)
19in monitor (from £150)
Speaker system (from £15)
CD-ROM drive (only needed during setup)
Keyboard (£5)
Mouse (£10)
Operating system (varies)
Legal ROMs (from around £5 each)
TOTAL COST = from £1,115





We're using a flat-packed Oak cabinet kit, manufactured in the USA by Arcade Depot and supplied in the UK by GremlinSolutions. This comes with a decent instruction booklet, so in under an hour, two hard-working Retro Gamer hacks had managed to assemble...



...this fetching little chappy. Well, alright, so we've not attached the piano-hinge side door yet, but it's surprising how quickly you can glue and screw the kit together. It definitely helps if there are two of you working on this though, especially when it comes to attaching that door.



To make our lives easier, we had GremlinSolutions pre-drill the two metal control panels. Buttons are easily installed – drop one through a hole and then fasten the supplied plastic nut up on the other side to hold it in place.



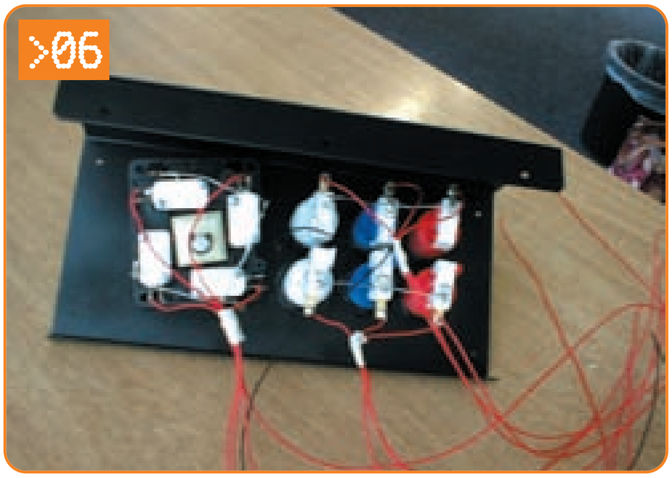
Attaching a microswitch to each button is just as easy. Each switch has two little holes in it, and the buttons have two notches on them. Angle the switch so that a notch goes into one hole, then rotate the switch so that the other notch clicks in the other hole – that's all there is to it.

>05



Now it's time for some soldering. All the COM (common) tabs of the switches must be daisy-chained together with wires, and connected to the GND (ground) connection on the I-PAC controller board. There's a separate GND for each player to help keep the wiring neat.

>06



The NO (normally open) tabs of the switches, which should be marked, connect to the relevant connectors on the I-PAC. When wiring the joystick, remember that pushing it in a given direction depresses the switch on the opposite side. You'll need around 40 wires.

>07



To give the control panels strength, wooden supports (which come with the cabinet kit) are fixed underneath the metal panels at either side. The panels are then screwed in place and a wooden slat drops into place above them.

>08



Inside the cabinet, we're using a VIA EPIA V motherboard (£75 from Mini-ITX.com), with 256Mb RAM and an 8Gb hard drive, running Windows Me. The I-PAC controller is taped in place for convenience, and connects to the PC's PS2 socket. It has a pass-through connector for the keyboard.

>09



We're using a standard 17in PC monitor, mounted on a home-made wooden stand which sits astride the PC case. PC monitors aren't designed to be laid on their backs, so you do this at your own risk. We don't advise leaving the cabinet unattended when it's turned on, just in case!

>10



You may need to configure MAME to match your controller, particularly if you've wired any controllers in the wrong place. This is easily done within MAME – press Tab and then choose the General Controls option.



You also need to individually configure all the games which MAME will be running so that they'll flip screens when going from one player to the other. To do this, hit Tab, choose the DIP Switches option and then select Cocktail mode instead of the usual Upright mode.



You'll want a front end which can run in a vertical screen mode too. We're using Cocktail Frontend which is a free download from www.mikebillings.com. With this configured, the cocktail cabinet's almost done. The finishing touch will be some printed graphics for the top, with a tempered glass or perspex overlay.

Readers' cabs

John Hardie

John bought an old JAMMA cabinet for £120 with the intention of refurbishing it. He says, "When I got the bug for building my own cabinet, I didn't have a clue on what to do. Thankfully the Internet came to my rescue, with various sites giving out tutorials, explaining arcade monitor frequencies, how to make an operating system work etc."



"The hardest part for me was getting the JAMMA interface to talk to my PC. I then found a wonderful site called Ultimarc which sold an excellent little gizmo called the J-PAC. This little adaptor not only converted all the controls, but the video as well. Because



of this, I now get to run MAME (using DOS) with Arcade OS as my operating system – all at native arcade resolutions. This gives the machine a completely authentic feel."

David Lloyd

David bought an old arcade cabinet six months ago from Arcade Heaven, and the components for a MAME conversion from Ultimarc, and spent three evenings carrying out the transformation. His cabinet features an old Hantarex arcade monitor (with 'INSERT COIN' burnt into it for full authenticity!) and a 450MHz Pentium 3 PC inside with video card, video cable and Ultimarc I-PAC.

David says, "My cabinet is still a work in progress – I'd love to get some marquees made up for it and maybe add a couple more buttons to each player to allow for Streetfighter II's six-button goodness. But I'll probably wait and get myself a four-player cabinet when my PC gets an upgrade and thus I have the old PC components to hide in a new cabinet and go to town on that instead. Whether my girlfriend accepts losing more room-space is another matter!"

Lee Bolton

Lee bought a JAMMA cabinet and for a while contented himself with buying JAMMA boards to slot into it, but then he started to want more. Lee takes up the story: "I found through the Internet that you could connect a Megadrive up to the machine via a JAMMA fingerboard, two old Joypads and an eight-pin din plug. Why a Megadrive? Well, there are loads of Megadrive games which were either coin-op conversions or based on coin-op gameplay – Streets of Rage, Golden Axe, Gauntlet 4, Double Dragon and so on.

"With the help of some fabulous websites and a trusty soldiering iron, within days of trial and error the Megadrive



was up and running inside my arcade machine. Cutting up the pads and converting them to the JAMMA board was painful but highly worth it, as the arcade machine is used like it would be with any JAMMA board. Player One Start corresponds to the Start button on the Megadrive and A, B and C are your normal three fire buttons on the machine. Sound is converted using the Megadrive's headphone jack so you can always turn the sound off if your girlfriend is getting annoyed with the loud blasting action. Simple stuff. Just place the Megadrive within easy reach of the coin door so you can easily swap and insert cartridges, and you're away.

"My children love it. They always want to challenge me for a game of Bomberman or Ms.Pacman (the Megadrive version has a two-player option) and they always seem to win. Maybe Dad is getting too old for games." RG*



eMag



>The Final Word

Weekly Famitsu is more than just a Japanese magazine – it's an institution. Jonti Davies looks between the covers of this celebrated publication...

In 1983, Nintendo launched its first proper home console in Japan: the Family Computer or Famicom. Two years later, it was clear that the Famicom revolution was in full flight. Millions of Japanese homes had one of these 8-bit consoles and Super Mario, Link and others had become superstars in their native territory. Famicom cartridges were being released at a tremendous rate – some sort of periodical review was needed for the education and benefit of the masses of new gamers. Famicom Tsushin (Anglicised as Famicom Communications) was therefore established by Japanese media giant ASCII as a bi-weekly videogame review in 1986.





Famitsu teases readers with adverts for the biggest upcoming games





Initially, the Famicom Communications' chief concern was Nintendo's ubiquitous format, but the magazine changed with the times. New formats were covered as they arrived on the scene, making the magazine a Japanese gamer's Bible, whatever their allegiances. Soon the title was abridged to Famitsu, which is now a legendary name in the world of videogames. But what made Famitsu such an important publication? And how does it fare today?

In the 1980s, Famitsu was simply the right title at the right time. Its huge success was largely down to the fact that it had no real competition, and with so many consoles and games being bought, its area was hardly a niche interest. In late 1991, it became necessary for the magazine to expand: what had been a bi-weekly magazine suddenly became Weekly Famitsu, which is the format in which it still exists today. In 1999, Enterbrain bought the title from ASCII in what was a rather shrewd acquisition. Every week, around 800,000 copies are picked up across Japan. Famitsu far outstrips the competition, but it's not simply the most successful Japanese games magazine, it's also the most influential.

Famitsu is famed for its reviews. Compared with the videogame critiques found in Western magazines, Famitsu's reviews are not nearly as detailed in their analysis of new releases. So-called cross-reviews are the publication's chosen method of evaluation. Four staff writers each submit a paragraph and award the game a rating out of 10. These scores are then added together to arrive at a total, a score out of 40. Any game that garners a score greater than 30 is given a Gold award. Thanks to Famitsu's massive circulation, that award can have a significant impact on game sales.

Chart tracking

As well as guiding the direction of the nation's disposable income, Famitsu is also in a unique position when it comes to reporting on game sales. It's in Famitsu that, with the co-operation of games stores across

Japan, the nearest thing to an official Japanese sales chart is collated and published. Unlike the Western videogame press, which relies on sales data from independent chart trackers, the Japanese look to Famitsu for their information. The magazine's readers are also encouraged to supply Famitsu with data that reflects the public consensus by filling out and returning the brief questionnaire attached to each issue (What games are you most looking forward to? Which systems do you own? etc). Famitsu is a powerful machine.

Aesthetically, too, Famitsu is a winner. Its mascot was created by famous manga artist Susumu Matsushita. (Matsushita, you may remember, drew the character artwork in Capcom's Maximo games.)Works from Matsushita are found on the cover of Famitsu most weeks, giving the magazine a distinctive look. Inside, the magazine's pages are packed with screenshots, Japanese text and further examples of the aforementioned artwork. There are also regular sections given over to comic strips and cute Japanese 'idols' (girls who sing, or don't sing, but nevertheless are very sweet and therefore popular).

Feature stories aren't common. What Japanese readers get (which, as Famitsu is nearly 20 years old, is presumably what they want) is news on upcoming releases, followed by lots of previews and reviews, and finally, in-depth strategy guides to recent titles. The games are very much the magazine's focal point. But that's not to say that Enterbrain (Famitsu's omnipotent publisher) suffers from tunnel vision: a small number of the 200-odd pages in each issue cover such minutiae as soundtrack releases, J-pop, and vitamin supplements (occasionally). From a Western perspective, Famitsu is an intriguing representation of Japanese culture.

Until 1991, Famitsu featured quite prominently on its covers – in English – the bullish claim that it was 'The Final Word on Games'. More than a decade since that tag line was dropped, few would argue if it made a return. In the Japanese videogame market there is but a single voice of authority. RG*







Each issue is a mix of previews, reviews and guides to the latest games



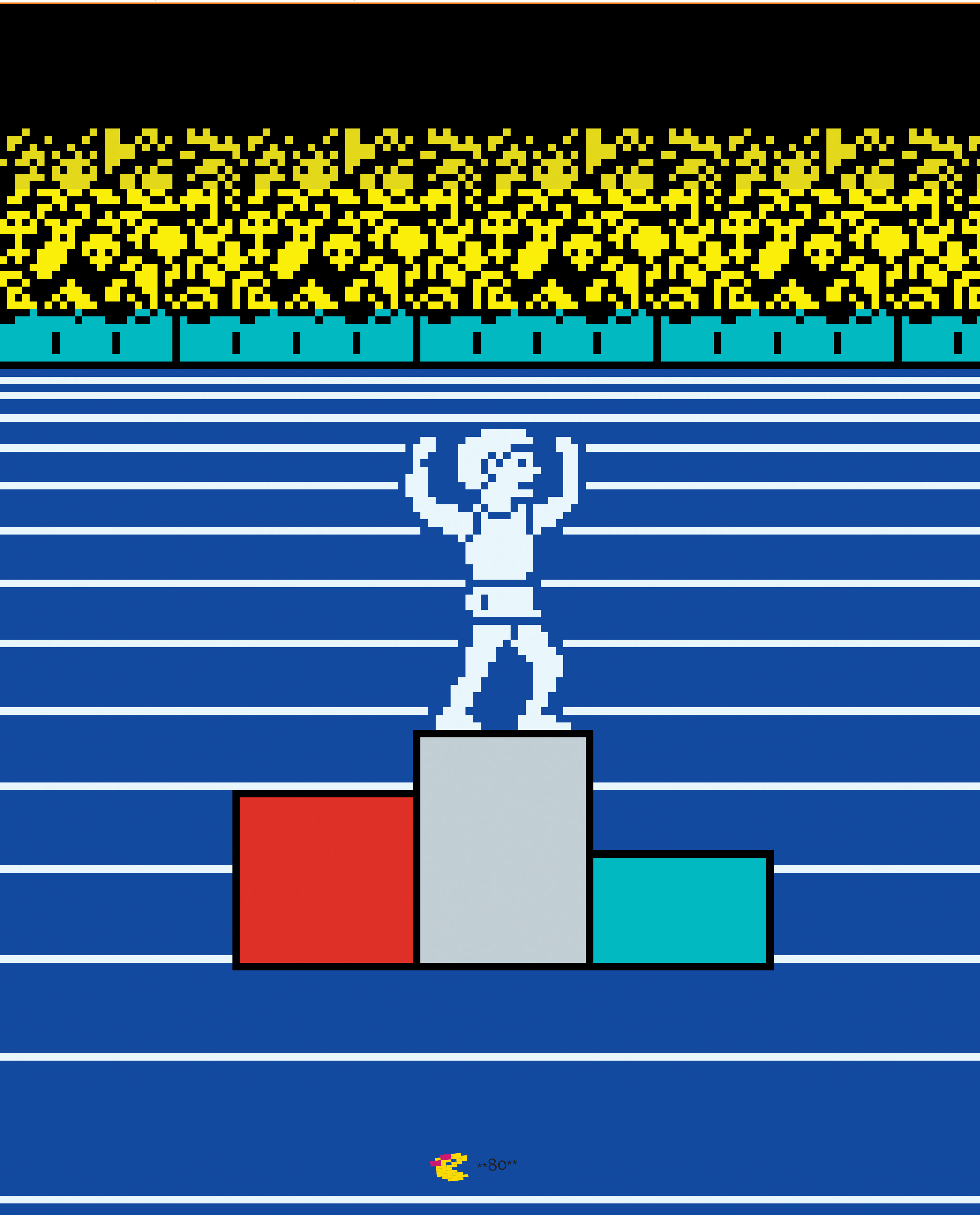


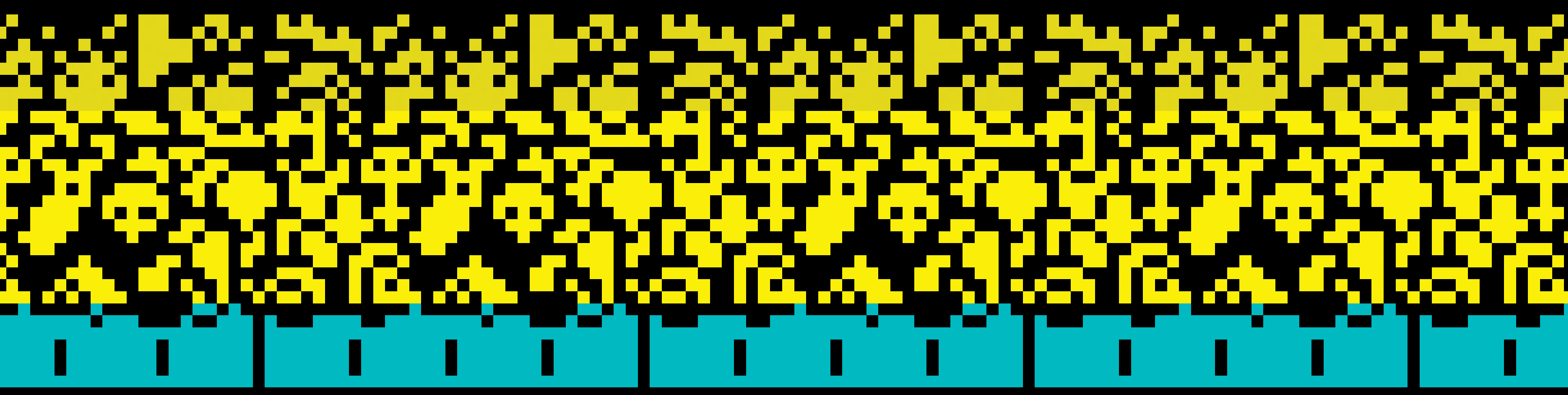












>Olympic Gold

In some civilisations in the world, being stuck in front of a screen and forced to move your arm frantically from left to right would bring about human rights issues. Yet in the 80s, this was a form of acceptable torture and we all did it for fun. Simon Brew looks at the sport of crippling yourself in the name of Olympic glory

There are some who would have you believe that the march of technology is a very good thing. There are some who would argue that, as processing power has moved on, games have become more sophisticated than ever before. And there are some who would happily sit in a pub for hours longer than they should, waxing lyrical about how we've never had things so good.

Try telling all that to a fan of the joystick waggler. Few genres of gaming have been quite so decimated by the onslaught of progress, and few genres have borne witness to what *could* be done riding roughshod over what *should be* done. Compare, if you will, the breathtaking simplicity of Track & Field on the Atari 2600 – which came with its own dedicated controller, no less – with Sony's latest Athens 2004 game. One is simple, easy to play, and loads of fun. And the other is produced by Sony.

So let's start right back there, but not without first setting some ground rules. This feature will focus solely on Olympics-style joystick wagglers. That resigns the completely non-Olympics games like Atari's Video Olympics to the sidelines, sadly, and sadistic torture devices such as Combat School to their own boxout. They'll be safer there.

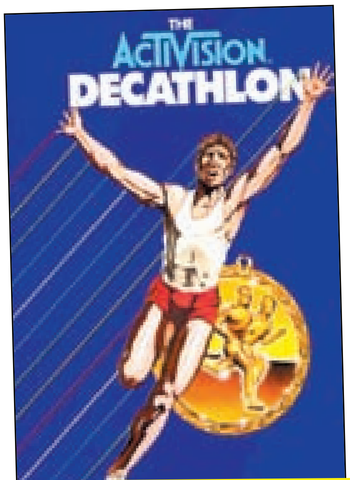
Hammer time

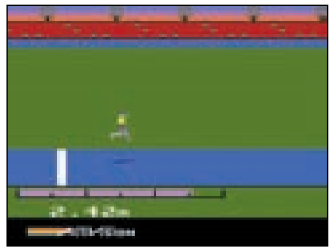
Konami's Track & Field (aka Hyper Olympics) seems a logical place to kick off, as it was a game that graced pretty much every system in some state over the past 20 years. Nothing, of course, can quite beat playing it in the arcades, with sweaty teenagers happily gobbing on the controls to reduce friction come button-battering time (they also figured that sliding their knuckle across the two buttons worked faster than smacking seven shades out of them), but again, we'll keep our focus on the comfort of your front room.

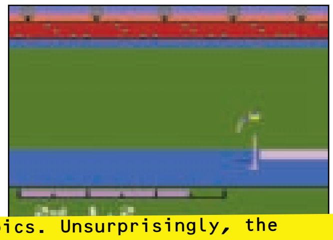
In the home, the game's origins go right back to that 2600 version, and that controller we mentioned earlier. Available either with the game or sold separately, the controller told you everything you needed to know about the challenge in store. Two white buttons either side needed to be beaten rapidly, and one red button in the middle needed to be touched for just the right amount of time. No doubt some smutty innuendo can drawn from all that, but naturally we wouldn't stoop so low. Yet.

A conversion of the arcade original, Track & Field came across well on the 2600, with pretty impressive graphics for the time and the compulsive gameplay that continued to underpin the game already very much in place. Yet it was all so simple. The 100m? You just whacked the white buttons, in rhythm, as fast as you could. The long jump? Ditto, but you also pressed the red button at the right point to jump, and had to get your angles right (different experts would have you believe there were different optimum angles, but just under 45 degrees generally did the job). And who can forget the javelin? In certain versions, if you launched it off the screen, your javelin would come down with a bird impaled on the end of it. Athletics and animal torture in the same game – classy.

The 2600 version of Track & Field was released in 1984 (a year after its coin-op debut), but by then there was a strong field of contenders building up. Activision – who wouldn't touch the genre with a barge pole now – had The Activision Decathlon up its sleeve. Written by David Crane and initially released in 1983 (and later benefiting from a fine C64 port), Decathlon was a great little game, albeit one that never threatened to win the virtual gold medal. It was simple to pick up and play, and while it didn't include factors such as getting your angles right, there were still elements of timing to consider. But history will remember the decathlon-game crown going to someone else.





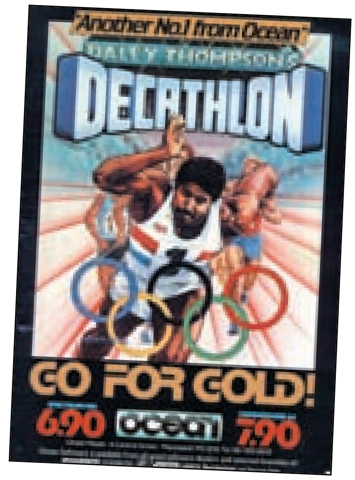


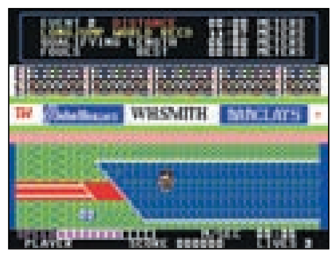
David Crane's take on the Olympics. Unsurprisingly, the Olympiad looked more than a little like Pitfall Harry

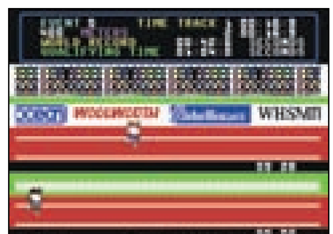
Daley worship

That someone? Mr Daley Thompson. Released in 1984 – the same year its hero walked off with the gold at the Los Angeles Olympics – Daley Thompson's Decathlon fully deserves its place in the hall of fame. Released on all the major 8-bit formats, the game was split over two sides of a tape, making 10 events in total. In truth, the formula wasn't very different to that of Track & Field, but that didn't detract from the quality of the gameplay, which managed to produce a cocktail of entertainment and exhaustion. Remember getting to the end of day one and realising that you had the 400m to run? And worse still, getting to the end of day two and releasing you had the dreaded 1,500m to finish? At least the 1,500m involved tactics, as you tried in vain to keep the energy meter under control.

Decathlon was a big hit across all formats and unsurprisingly, Ocean was keen to produce a sequel. It didn't take long to arrive. In 1985, Daley Thompson's Super-Test arrived, and it's here that you can start to trace the demise of the joystick waggler.

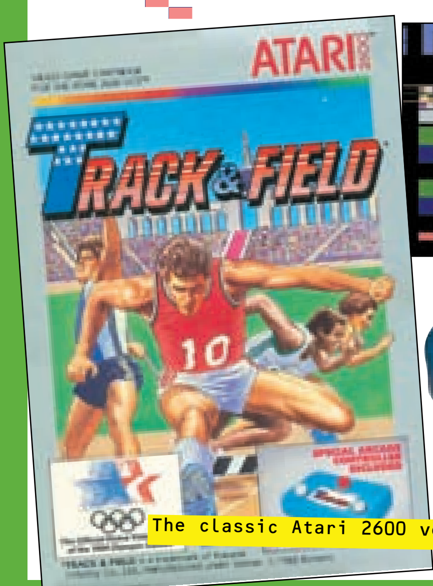


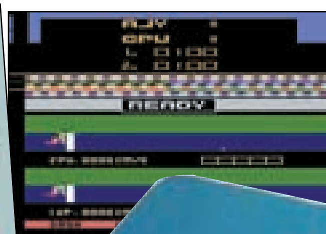




Blatant advertising in computer games. That'll never catch on!

Super-Test wasn't a bad game, but it didn't capture the magic of the original. The events within it were that bit more sophisticated and perhaps that was part of the problem. The 400m became a 400m cycle race, and clunky events such as high diving and penalty taking (?) managed neither to retain the simplicity of the original nor endear themselves as worthy replacements. Some counter this view, arguing that the events required a bit more skill, and presented a better challenge all round. Yet for our money, Super-





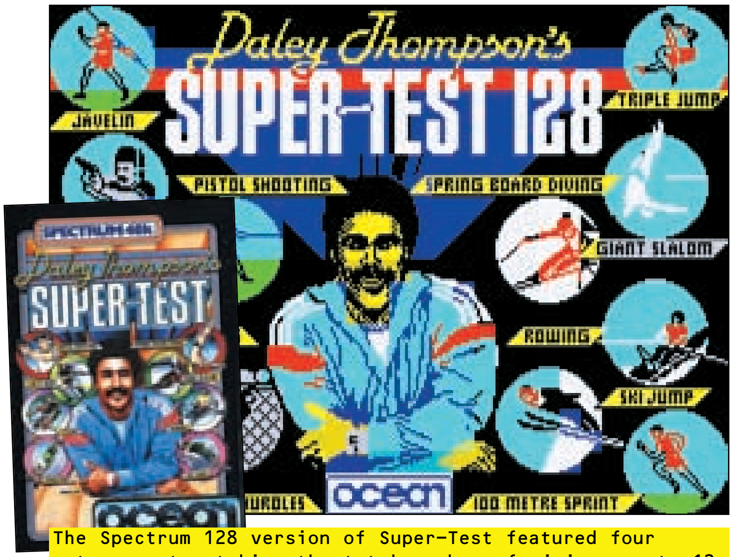




The classic Atari 2600 version of Track & Field, complete with custom controller

A day at the races

A rundown of the 10 gruelling events which make up Daley Thompson's Decathlon



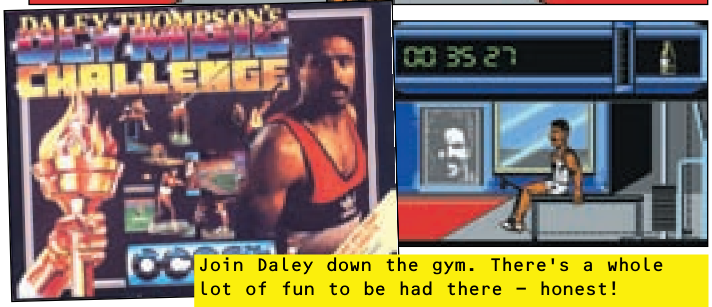
The Spectrum 128 version of Super-Test featured four extra events, taking the total number of mini-games to 12

Test just didn't capture the magic of Decathlon. But it was a damn sight better than what came next.

Daley lent his name to one more outing from Ocean, but by this time, the glory days were long gone. Daley Thompson's Olympic Challenge, which was released in 1988, kicked off in a gymnasium, where you had to earn the right to tackle the various events. And just where exactly is the fun in that? It's like that bit in The Sims where you're asked to position a microwave oven in a place of your liking in a virtual kitchen – you have to stop and ask yourself whether this is actually a game you're playing or whether it's just a pretend version of a nagging spouse. Get to the gym was what Daley wanted us to do, but not many did, and thus the prospect of a Daley 4 was no more.

Still, Daley was a big success, and it wasn't just Ocean who was reaping the rewards of the joystick-waggling genre. Joystick manufactures, for starters, must have thought all their Christmases had come at once, as punters resigned themselves to a continual programme of replacing joysticks that had been well and truly knackered when trying to shave another tenth of a second off a record time. Konami was also happy with the success of Track & Field, and it went on to apply similar magic to 1984's Hyper Sports…

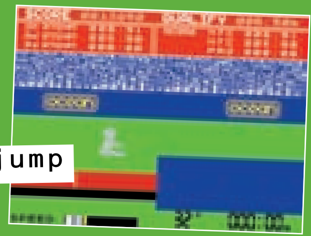




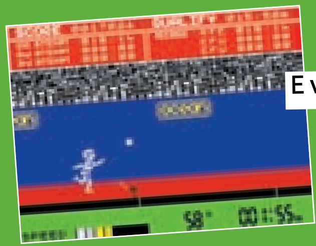
Join Daley down the gym. There's a whole lot of fun to be had there – honest!



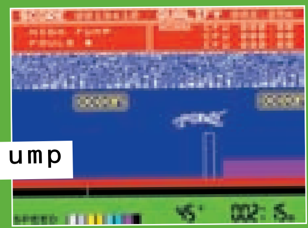
Event 1: 100m



Event 2: Long jump



Event 3: Shot put



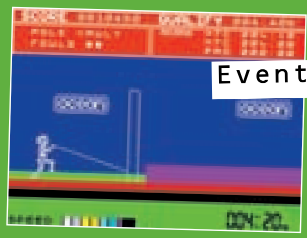
Event 4: High jump



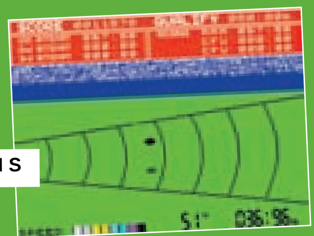
Event 5: 400m



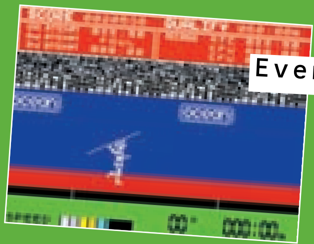
Event 6: 110m hurdles



Event 7: Pole vault



Event 8: Discus



Event 9: Javelin



Event 10: 1,500m



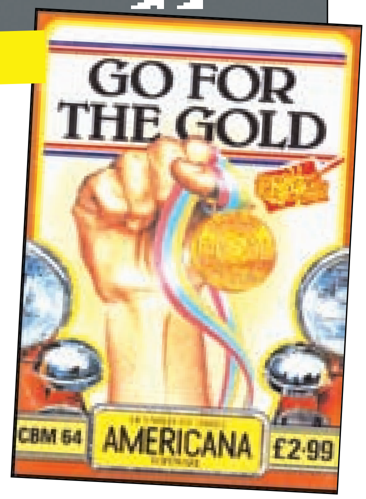
Sport relief

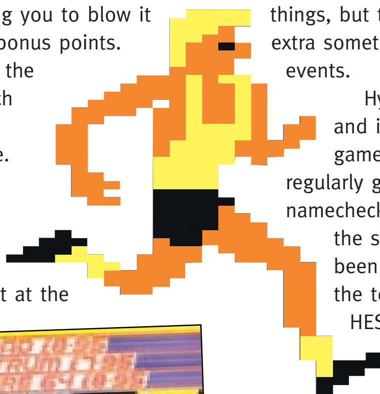
By this time, Track & Field had gained extra prominence, as it was a regular feature on some otherwise-crappy BBC1 quiz program called First Class, hosted by Debbie Greenwood (who, let's be honest fellas, we all had a thing for at that age). Yet Hyper Sports had its own weapon that ensured no one would forget it in a hurry. It had an athlete with a dodgy porn-star moustache. Remember it? It didn't make it to all of the home computer versions, but it served as a videogaming fashion statement.

Anyway, the game – it was brilliant. In fact, you could put together a strong case for Hyper Sports being one of the top three joystick wagglers of all time. Not only did it feature a diverse selection of genuinely interesting events, but it also had lots of little details. For instance, shoot all the clay pigeons and a big duck would fly in out of nowhere, teasing you to blow it away for extra bonus points. Then there was the swimming, which introduced the need to breathe. The fire button made your character breathe in, and if you did it at the wrong moment, valuable seconds would be lost. But if you timed it right, you'd satisfyingly pull away from the pack. Simple things, but they added an extra something to the events.



HES Games was later re-released on a budget label in 1986, under the title Go For The Gold



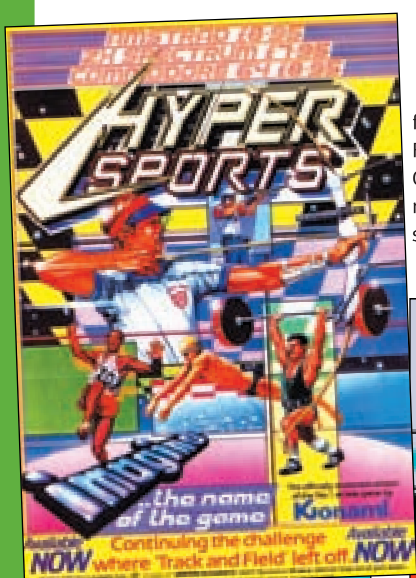


Hyper Sports was, and is, a cracking game, that still regularly gets a namecheck. Yet criminally, the same fate hasn't been reserved for the totally forgotten HES Games (1984). Granted, the catchy name does it no favours (it was also known as Go For The Gold and Gold Medal Games), but at the time it was rightly lauded as one of very best sporting titles bar none.

Developed by 3-2-1 Software for the Commodore 64, the game mixed in a bit of diving, some weightlifting, the hurdles, the really rather tricky archery competition, and the staple diets of the genre – the 100m and the long jump. It brought in elements such as a replay feature, and wasn't afraid to play around with perspective. HES Games also got you waggling your joystick until your arm needed medical attention and introduced some skill requirements. That the game supported up to six players did it no harm either, and if you should chance across a copy today, you'd be doing gaming history a service by snapping it up.

Before we move on to one of the greatest names in joystick torture, let's briefly pause to remember some of the worst. Hunchback at the Olympics, for instance, doesn't even appear to have been a good idea at the time. It also bore a striking and really quite frightening resemblance to certain, drug-pumped Eastern European athletes. Mixing wacky events with an Olympic-esque theme has never really worked either. Amiga owners would find that out with the distinctly average James Pond: Aquatic Games (which washed up in Robocod's wake), but Gremlin fared a little better with Alternative World Games (which you can find on issue 3's coverdisc, assuming you haven't flogged it on eBay by now).

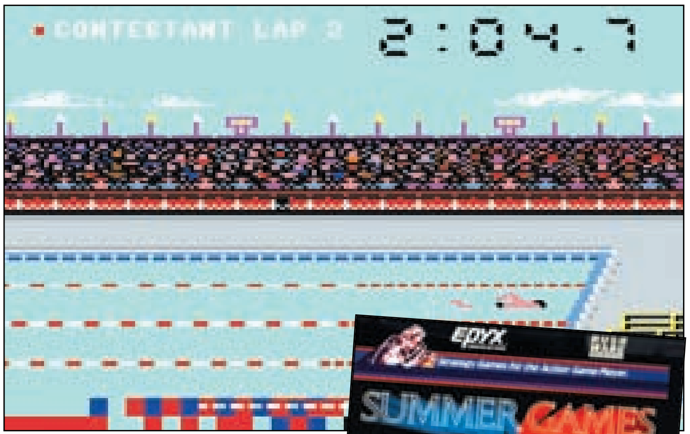
Then there were the numerous Tynesoft efforts, such as Summer Olympiad, European Games and Winter Olympiad 88. Now Tynesoft, to be fair, never really had a reputation that would send you into raptures at the announcement of a new game, and its event games did little to improve its image. At best they were OK, but at worst it was like putting £5 notes through a paper shredder.

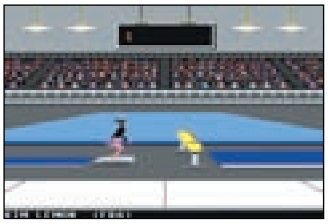






The classic Hyper Sports, converted to home systems by Imagine







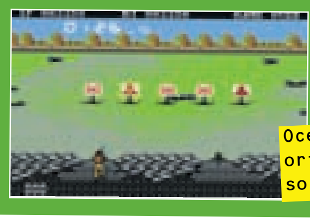
Epyx's irrepressible Summer Games set new standards in the field

Combat School



Not strictly relevant, granted, but has there ever been a more pointless joystick waggler than Combat School? We're all for military-based games – running around and shooting baddies and stuff – but this joyless exercise just had you doing the rock-hard training (as did a game based on the Paul Hardcastle's hit 19). And that was it. They could at least have got the mental drill instructor from Full Metal Jacket. Even Captain Harris from Police Academy would have done.







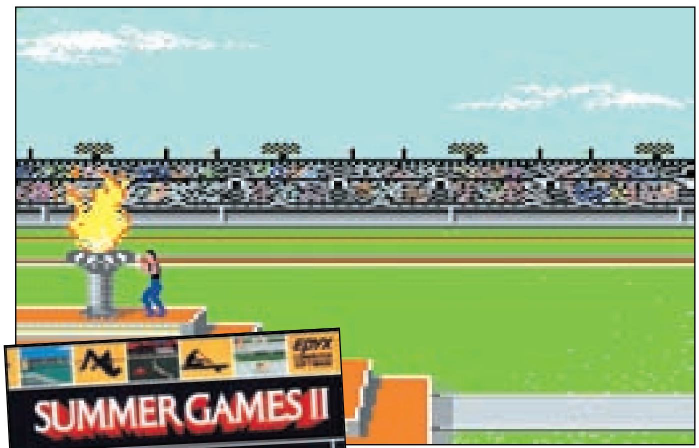
Ocean's conversion of Konami's original. War has never been so little fun

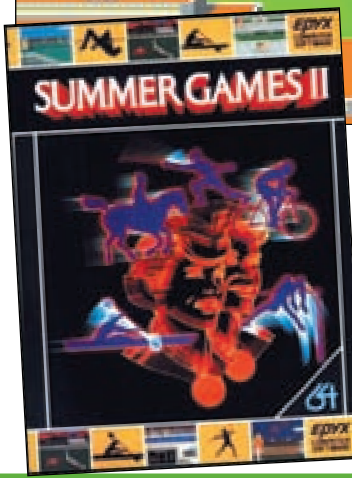
Epyx-ation

We move on to a company that managed to marry up far more than a cursory waggle with something a bit more strategic. Epyx, when on top form, was the absolute master of the genre. It's perhaps best known for the godlike California Games, but for the purposes of this feature, our attention shifts to its selection of summer and winter games (which also means there's no room to talk about the flat-out wonderment of World Games, sadly).

So we start back in 1984, when Summer Games was released on the Commodore 64. The game actually had its origins on the Atari 2600, when a merger between Epyx and a firm called Starpath meant the former inherited the latter's partly finished code. It would eventually appear on the 2600 and would also be ported to many other platforms, including the Atari 800, Apple II, Sega Master System, Spectrum, Amstrad and even the ST and Amiga some eight years later. For one game to have such a life span, you'd have to conclude it was really rather good.

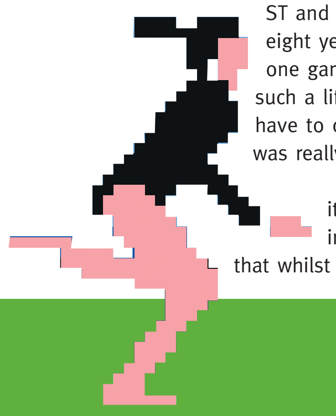
What made it all the more interesting was that whilst contemporaries such as Daley Thompson's Decathlon and Track & Field were interested primarily in you banging the keys, waggling the joysticks and occasionally hitting the right button for the right amount of time, Summer Games introduced a more strategic edge. In fact, it's hard to think of many other games in the genre where waggling took such a back seat. Sure, it was called upon at some points, but the game far more generously rewarded timing and skill, and each event required a different control dynamic. The devil really was in the detail. Not only were you left with the impression that someone had genuinely slaved away to polish many of the events 'til they shined, you also got little medal ceremonies and an opening in which a little man ran onto the screen and lit the flame.





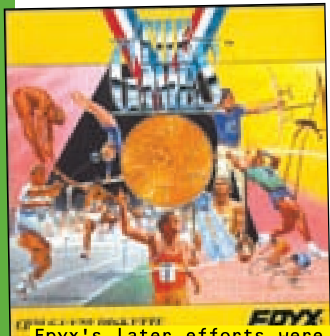


The sequel appeared a year later in 1985, featuring a wider range of events



The success of Summer Games spurred Epyx on to produce more games in the genre. In fact, with the exception of a couple of non-related titles that did the business (the Impossible Mission titles, mainly), Epyx thrived due to its Games series. Summer Games II followed in 1985 and managed to better the already-excellent original. Mixing what were tremendous graphics for the time with some surprisingly sophisticated gameplay, it was rightly regarded as a must-have by the press. Actually, that last comment needs tempering a little. Whilst many Epyx titles found their way over to other machines, even the most impassioned C64 hater would have to admit that Commodore owners had the best deal here. Some would go as far as to argue that Epyx's success on the C64 in particular helped both the developer and computer itself achieve prominence. They certainly did few favours for other machines.

Winter Games was another 1985 Epyx release, and that actually did fare quite well on





Epyx's later efforts were disappointing, with many fans preferring to dig out the originals instead

other formats. It was, again, a brilliant piece of software, and never before or since have otherwise masculine teenagers been so transfixed by figure skating. Naturally, they preferred the bobsleigh, or at least that's what they told their mates.

The firm then went on to develop the brilliant California Games and World Games, before ultimately returning to more traditional sports releases in 1988. Sadly, both The Games: Winter Edition and especially The Games: Summer Edition were disappointing by Epyx's high standards. Perhaps the problem was that it'd got both the summer and winter games licked first time around and had left itself little room to develop the franchise.

Sadly, in many ways, the new Games titles marked the start of the end for Epyx. It pooled more of its resources into a handheld gaming device called the Handy, which would ultimately be sold on to Atari and become the Lynx. Yet Epyx's cash reserves were drained, and in 1991, it filed for bankruptcy. Eventually, the name was bought, but still ended up consigned to the gaming graveyard.

Game over?

And after that, frankly, the genre was never really the same again. Companies still tried to produce good athletics-related joystick wagglers, but games such as Gremlin's Super Sports (1988) never really cut the mustard. That's not to say that publishers had given up – far from it, in fact. Excited by the impending 1992 Barcelona Olympics, Ocean Software gave the world Espana 92: The Games. And this is where we come back to the point we made at the outset – how the advance of technology has certainly diluted, if not killed, the genre.

Espana 92 simply missed the point. By introducing elements of team management and training – which could have worked, but didn't – the focus was taken off the events themselves, and they became little fun to play. More than 30 events were packed into the game, but in retrospect, honing that down to 10 and getting them to work better would have been a more sensible option. Hilariously, one of the Amiga magazines at the time – Amiga Action – lauded it, with a 90% plus score. Everyone else saw it for what it really was: a rushed, distinctly average cash-in that failed to achieve anywhere near the playability of games seven or eight years older.

Fortunately, all was not lost for those who were into their waggling, as one of the oldest names in the genre continues to carry the torch. We're talking Track & Field and whilst it's now four years since we last saw a T&F game, we'd like to think that we'll meet again in the future. Particularly worthy of merit were the excellent PlayStation versions, which united the familiar old gameplay (and hardware-damaging tendencies) with a polished presentation style. By adding in more events, Konami also succeeded in expanding the game a little, too. By the last version, some weird thing involving dances and ribbons had appeared. Not sure what that was all about, though.

It's been a barren time for fans of the genre though since that appeared, with only Sony's Athens 2004 title to really talk about. Actually, it's not too bad, although again it seems intent on taking itself that little bit too seriously for our liking. It certainly leaves us harking back to the days: when a ghostly white Daley Thompson waved his arms to the crowd; when we finally got the hang of Summer Games II; and when, for the first time, we looked at that buggered Quickshot II and figured that this might be an expensive hobby after all.

So like we said, progress isn't always a good thing. RG*

The Track and Field series lives on, and Sony has just released Athens 2004 exclusively for the PlayStation 2



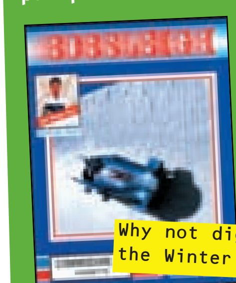


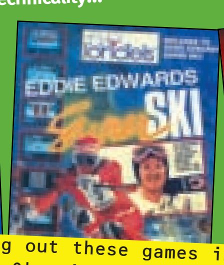


Winter of content

It wasn't just the summer Olympics that attracted their share of games. The winter equivalent had programmers just as busy, and not just on Epyx's aforementioned Winter Games. Arguably the best other example came from Digital Integration, as this focused purely on one event, which you can guess from the name of the game – Bobsleigh. It was a terrific game that is sometimes easily forgotten and deserves to be dug out.

There was Eddie Edwards' Super Ski, Flair Software's Winter Sports '92, the passable Professional Ski Simulator from Codemasters, the underrated Ski Star 2000 (which, er, came out in 1985) and Electric Dreams' middling Winter Sports. And we guess Horace Goes Skiing could perhaps sneak in on a technicality...







Why not dig out these games in time for the Winter Olympics?

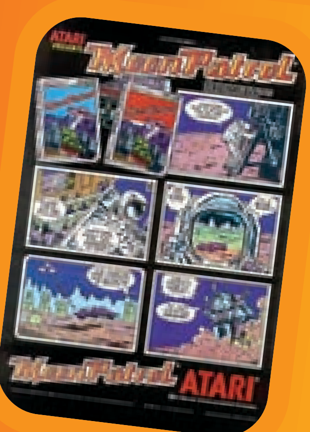
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atari advertising gallery







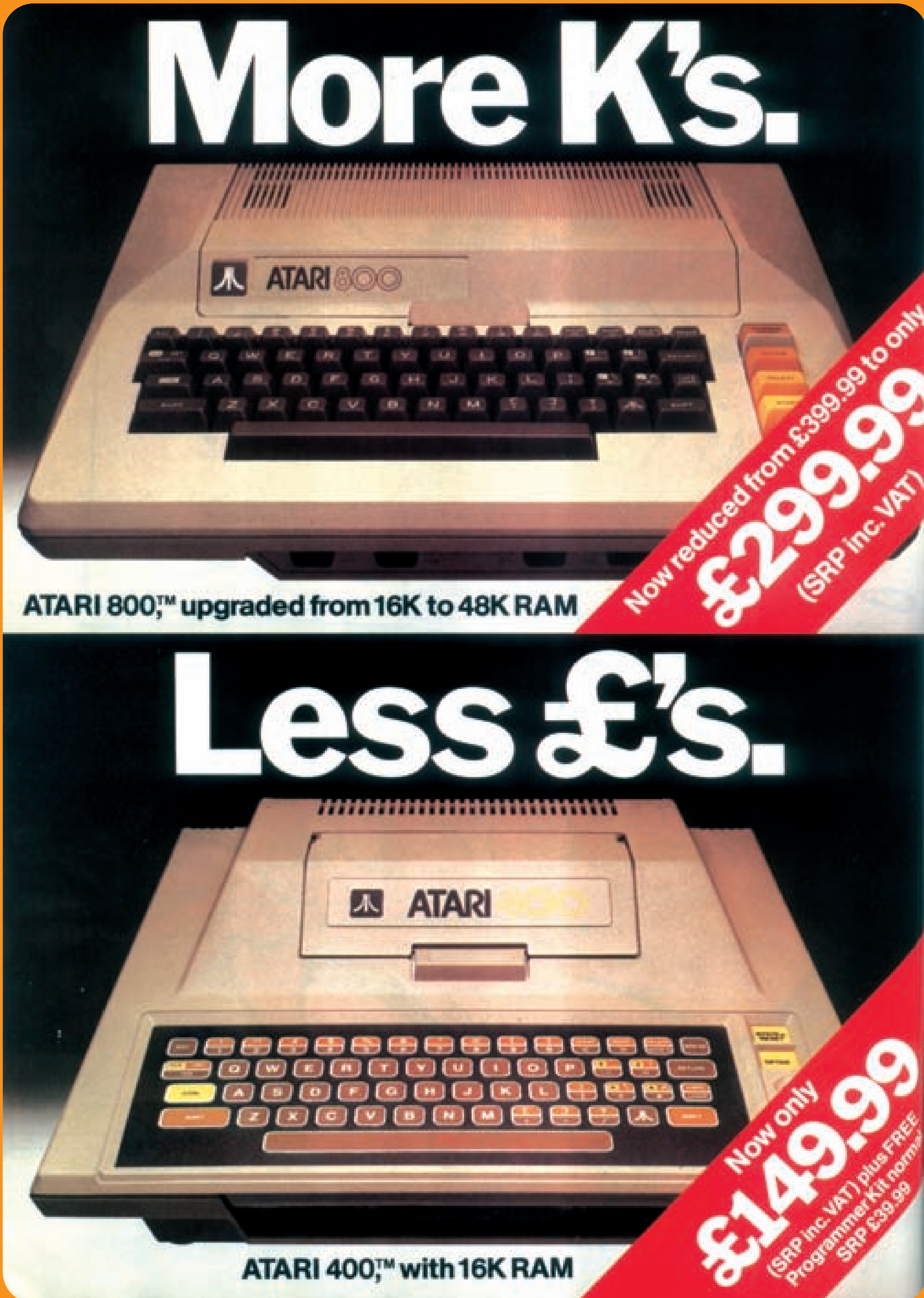




To tie in with this month's Atari 8-bit feature, we've rifled through the pages of many classic magazines in search of important, interesting or just downright bizarre Atari adverts. Here, for your viewing pleasure, are the best examples. Please note that these are old adverts, so don't ring the telephone numbers listed and then complain to us that the number you have dialled is not recognised. Yes, you know who you are



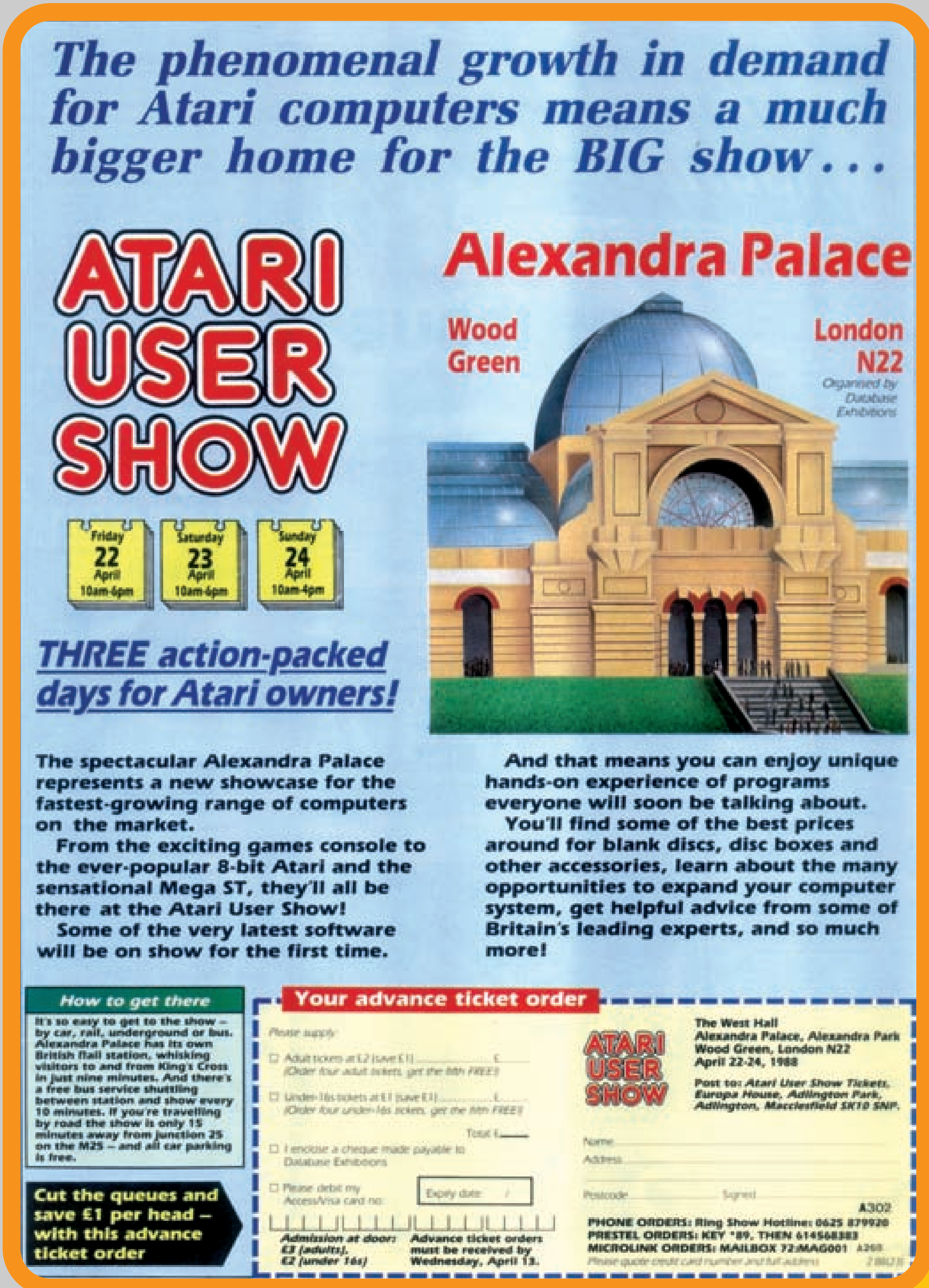
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>Join the Revolution

Revolution is the UK developer behind our classic cover-mounted game, Beneath a Steel Sky, and the forever popular Broken Sword series. We spoke to founding member Tony Warriner about Revolution's past, present and future...

Revolution has been developing games for 15 years, and in that time it's released six adventure games. That's a small but significant catalogue of titles. Its first game, Lure of the Tempress, was released in 1989 and, at the time, was a refreshingly contemporary point-and-click adventure. The unique 'Virtual Theatre' engine allowed non-playable characters to 'live' in the game world, going about their everyday lives. The engine was used again in Revolution's 1994 follow-up, Beneath a Steel Sky. Swapping the fantasy setting of Temptress for a dystopian sci-fi scenario, Steel Sky stood out as an intelligent adult adventure that fully deserved its cult status.

Revolution is perhaps best known for its Broken Sword games. The first, subtitled The Shadow of the Templars, was released in 1996 on the PC and PlayStation (a GameBoy Advance version followed later in 2001). Following American tourist George Stobbart and accomplice Nico Collard's quest for clues relating to the historical legend of the Knight Templars, the game carefully mixed adventure, intrigue and humour. George and Nico returned in 1997's sequel, The Smoking Mirror, before Revolution rested them for a little while and concentrated on its next project. Following the success of the two Broken Sword games on the PlayStation, Sony commissioned Revolution to produce a new adventure game. The result was In Cold Blood, a PlayStation and PC title that blended adventure and espionage. Despite mixed reviews, the game sold well and remains a favourite of adventure fans.

Since the release of In Cold Blood in 2000, Revolution turned its attentions to the third Broken Sword game, which was released on PC, PS2 and Xbox in November last year. This new entry moved with the times, introducing a new 3D engine which allowed for direct control and even some simple platforming sections. Despite the 3D graphics, the game featured all the Revolution hallmarks, with an absorbing storyline, strong characterisation and clever puzzles.

Following the release of Broken Sword 3, Revolution has announced a surprising shift in focus, sacrificing production duties and focusing on its key design skills. With this, and news of Beneath a Steel Sky 2 leaking out onto the Web, we thought it a fine time to chat with Revolution's Tony Warriner…



Tony Warriner, one of Revolution's founding members

Retro Gamer: Revolution was founded by Charles Cecil, David Sykes and yourself in 1989. Can you tell us about how you got together?

Tony Warriner: Back in 1985 I managed to fail all my school exams by concentrating instead on programming an Amstrad CPC game called Obsidian. This game was subsequently published by Artic Computing, part owner of which was Charles Cecil. After this I drifted around doing 8-bit games programming here and there – Codemasters, and the like – and ended up doing some aviation software with Dave Sykes. (Have you seen all those little strips of paper they use in the towers at airports? Well, the system we worked on was the first in the world to computerise those. And coming from the 8-bit gaming scene, we simply had to encode our initials into the messages.)

Around this time, Charles was Development Manager at Activision, but was looking to start his own development company. After a weekend retreat in darkest Wales, we quit our jobs and work commenced on Lure of the Temptress. Incidentally, there is a fourth founder of Revolution, Noirin Carmody, who has always been Commercial Director. Without her business acumen, we'd not have got this far.

RG: We gather you were a big fan of text adventures at the time. Do you have any favourites?

TW: For me, the Level 9 games were all true masterpieces – Return to Eden, Worm in Paradise etc. Unfortunately for Level 9, its attempt to move on from text-based games and compete with the Sierra-style stuff didn't work out, despite a promising-looking engine. This all coincided with Revolution's inception.

RG: Did Revolution ever consider creating text adventures, or were you always going to take the point-and-click path?

TW: Our plan was to beat the Sierra games, which were hugely popular in the USA and starting to make serious in-roads over here. It was far too late for text-only stuff.

RG: Tell us about Lure of the Temptress, in particular the 'Virtual Theatre' engine. Was characterisation key?

TW: I'm not sure anything was key, except perhaps the tech behind Virtual Theatre. The whole thing was done organically, by which I mean we just programmed away and that fed back to Charles' ideas for the design and so on. There was never much of a design document. There wasn't even the title Lure of the Temptress until about 10 days before duplication when Virgin picked our joke name, from a list of titles, as the one they wanted.

RG: How hard was it to create a game like Temptress with such a small team?

TW: It was moderately hard. Looking back, the problems we had were due to our lack of specification and design. I'd love to do Lure now, it would be sooo easy. Beneath a Steel Sky was far harder, for the same reasons. That game was the hardest thing I've ever done.

RG: What inspired the story and setting of Beneath a Steel Sky? And is it true it was originally to be called Beyond the Abyss?

TW: We felt we'd had enough of dungeons for a while, so the polar opposite had to be science fiction – a genre currently being grossly overlooked in contemporary gaming. I've never heard the title Beyond the Abyss!?

RG: Despite the bleak sci-fi setting, the game is still laced with humour. Was this a conscious decision?

TW: Yeah, pretty much. The idea of a dark, grim world, but with the human spirit shining through here and there works well, whereas games that take themselves too seriously generally fall flat on their faces. But we were making the games to amuse ourselves, too. The Hobbins "it's crap, son" line probably put a week on the schedule as people fell around laughing. The trick is not to over do it and turn the game into a farce.

RG: You've cited Beneath A Steel Sky as your favourite Revolution game. Why does this game stand out?

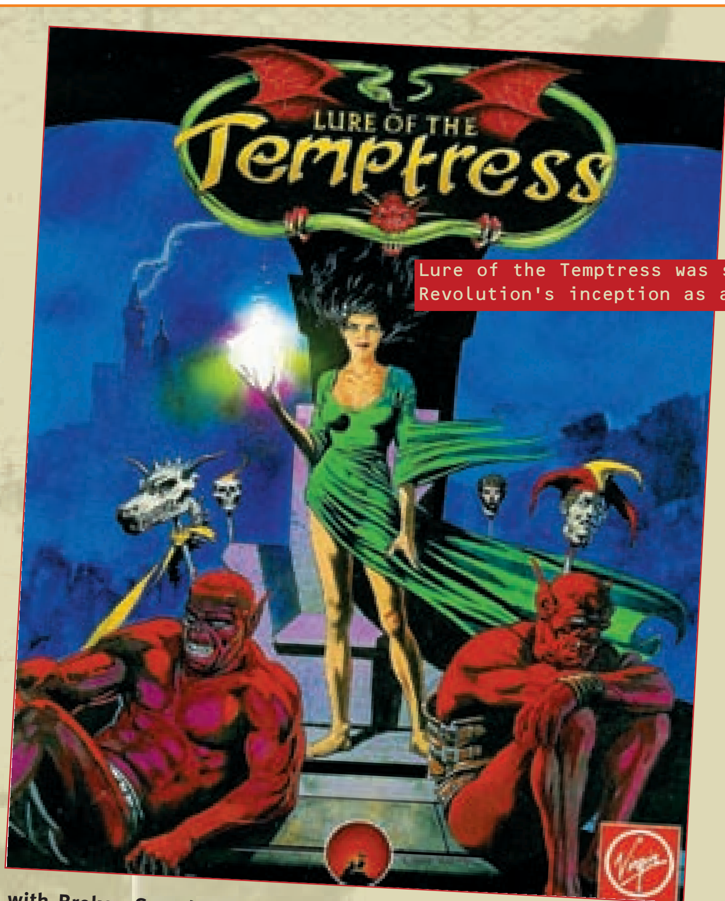
TW: I suppose lots of reasons. It was probably the last game any of us ever did where we could just sit and do what we wanted with minimal interference. It was never 'positioned' or 'placed' into a marketing segment – it just happened. That makes it special, somehow.

RG: For your next game, were you ever tempted to play it safe with a sequel to Lure?

TW: I don't think it was ever even considered. A sequel would have been commissioned on the back of sales success, so there would have to be a gap anyway. Lure did well, but everything had moved on by the time Steel Sky had been finished. Lure 2 would have been instead of Broken Sword, a game that was perfect for its time.

RG: Broken Sword then. Were you surprised that a 2D point-and-click adventure could be so successful, especially on the PlayStation?

TW: Everyone was surprised by the PlayStation success. Virgin turned it down, allowing us to sell the PlayStation version directly to Sony. I think the sales forecast was 60,000 copies and it went on to do nearly 300,000. Then, bizarrely, the same thing happened again





Lure of the Temptress was started in 1989, even before Revolution's inception as a development company

with Broken Sword 2. This was the only time Revolution has ever earned any royalties on its games!

RG: How much pressure was there from Virgin to release Broken Sword 2?

TW: Well, even though the PC version of BS1 had done well, Virgin appeared not to be fully at ease with the idea of adventure games. On the one hand, BS1 was profitable and solid, but on the other, such games don't turn into mega hits, like Command & Conquer did, for example. There was a mentality within publishing that said you were better off throwing money around randomly, and maybe scoring a surprise big hit, instead of backing steady, but nonetheless profitable games like Broken Sword. But this sums up the problem adventures have always had – they sell, but not enough to turn the publishers on.

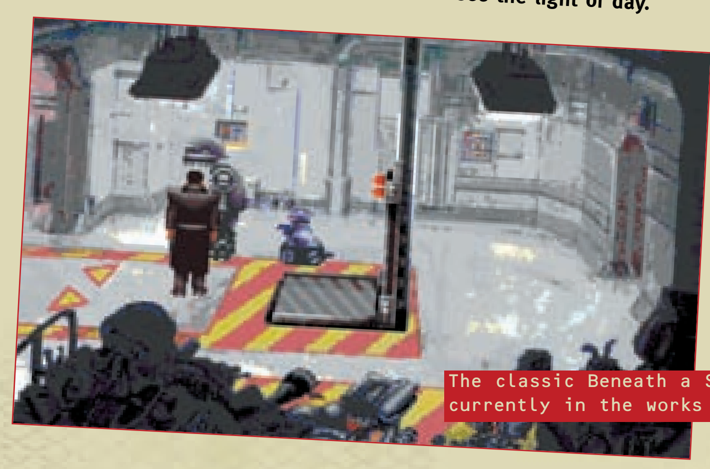
Anyway, as BS1 had been expensive to make, Virgin drew us this little publisher graph that showed how much money they'd lost on BS1 and how a sequel would have to be written on half the money and in half the time (which it was). It was a frustrating time for us because we were producing good games that reviewed and sold well, but we had to beg for every penny of development cash. At the same time publishers were burning money faster than it could be printed on truly terrible internal projects that would never see the light of day.

RG: Your next title, In Cold Blood, placed more emphasis on action. Again, was this forced by the publisher?

TW: By this time Virgin Interactive was in the process of being taken down by its ailing US parent and so we were out on our own again. Given the success of BS1 and BS2 on the PlayStation it seemed natural to try and build on that with Sony. The thinking was that if we took the story and humour from our other games but moved them into a more conventional genre then we'd be more successful still. But this was at a time when, despite the success of Broken Sword, it was clear from a publishing perspective that the 2D point-and-click genre had run out of steam. We couldn't have signed a Broken Sword-style game anywhere.

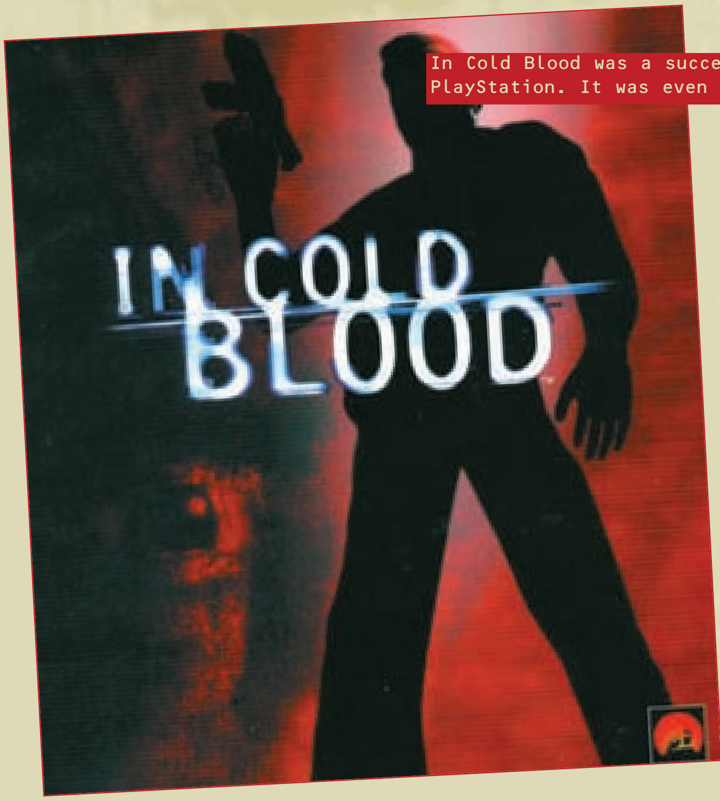
RG: In Cold Blood is perhaps the first Revolution game to receive some less than favourable reviews. How did you react to this?

TW: The reviews went two ways: love or hate! There was some confusion as to what the game was about and so reviewers who were hot for Metal Gear-type games, rather than adventures, were perhaps not amused. If you take the game as an adventure, and expect nothing more, then it's actually pretty good, and many



The classic Beneath a Steel Sky. A sequel is currently in the works







In Cold Blood was a success on both PC and PlayStation. It was even translated in Russian!

people saw that. It sold very well, better than Broken Sword, and still sells well in North America.

RG: A third Broken Sword game was inevitable, as was the shift from 2D to 3D. How did you go about pleasing fans of the original games as well as those new to the series?

TW: We thought the time was right to have a go at reviving the adventure genre by showing how you could make it work in 3D and with direct control. A big part of this was the success of the GameBoy Advance version of BS1. We felt that this implementation, using direct control, worked better than the mouse-based original. This gave us great confidence and heavily influenced Broken Sword 3. Our argument was that the essence of Broken Sword is the story, the narrative, the voices, etc. By and large, that's true.

RG: Broken Sword 3 received great reviews. Was it commercially successful, compared to the first two games?

TW: In fact, it sold more or less the same, and to the same people. We didn't widen the market as we had hoped. But there was an element of Catch 22: on the one hand, such an experiment could only be done with an existing, respected brand like Broken Sword; but in the shops, this held it back as the name shouts '2D point and click!' to consumers. And of course, it cost a lot more to make – another US$1 million over BS1.

RG: What's the story behind BS3's cancelled PS2 release in the US? That must have been a considerable blow.

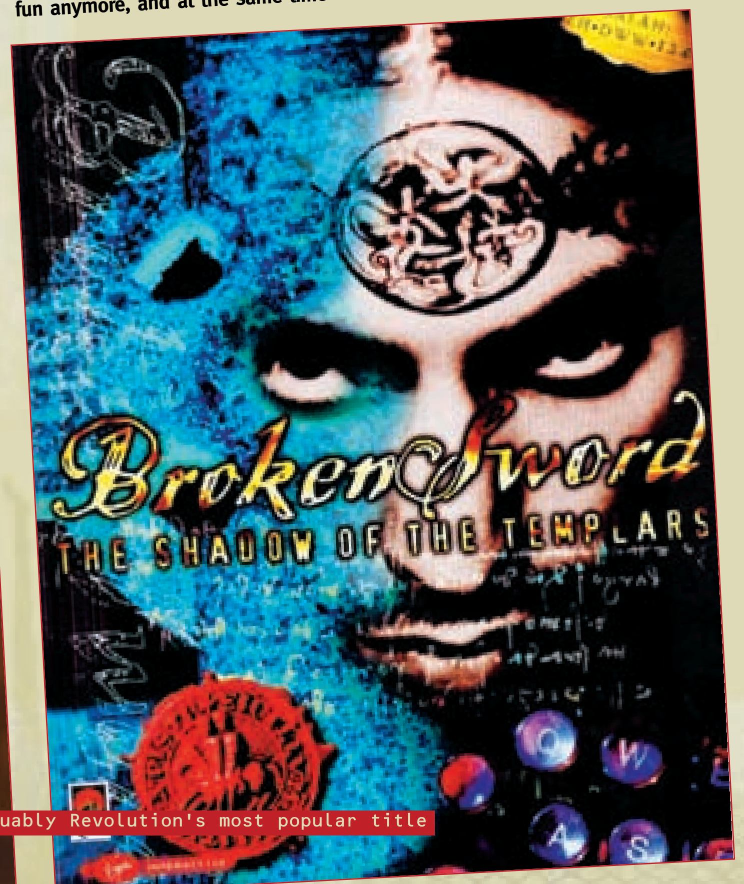
TW: It wasn't so much cancelled, as much as it never got Concept Approval from SCEA. However, there's a good chance it still will, so fingers crossed...

RG: Revolution is soon to celebrate its 15th birthday, which is no mean feat for an independent developer. However, you recently announced that you would be concentrating on design rather than production. What's the reason behind this decision?

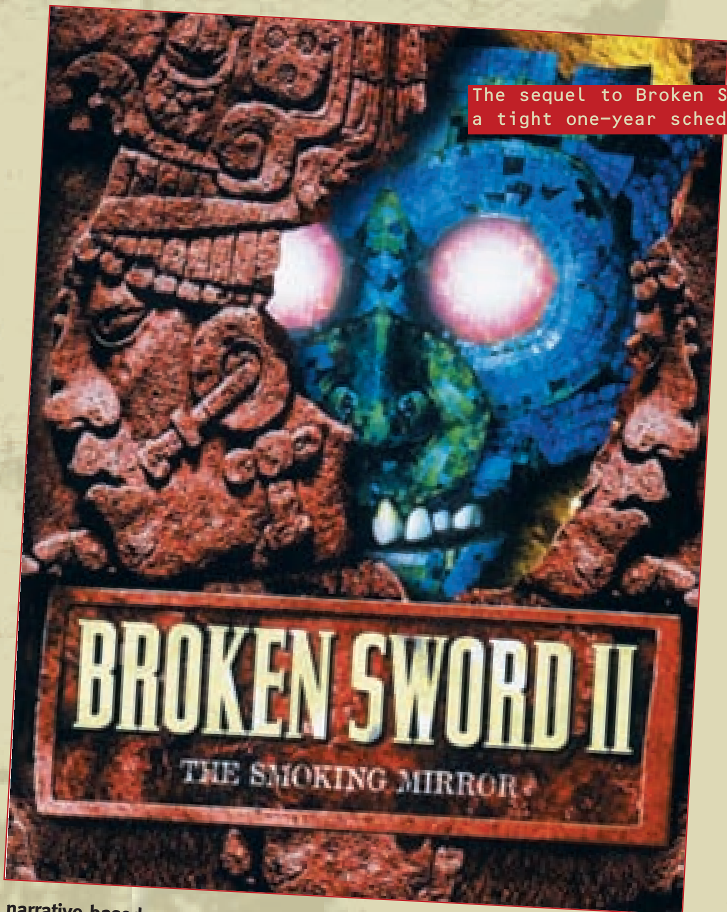
TW: We certainly felt that we needed to scale back and consider how we want to move forward, without the constant pressure of running a studio. We were wondering why we weren't having fun anymore, and at the same time looking at the upcoming platform transition and all that it will entail. We also need to think about what sort of games we want to write and what will do well in the mass market.

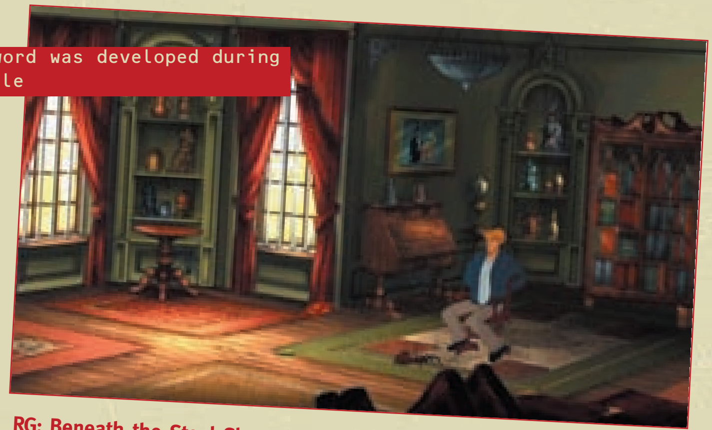
Our feeling is that development of mass-market games – eg console and PC games at full price and sold through retail – is going to change fundamentally over the next few years. There will be super developers, with hundreds of staff and in-house code bases supporting multiple projects. Perhaps there will be half a dozen of these in the UK? But outside of these companies, many smaller teams will exist, and they will focus on their specialist skill sets; ours being the design of story, and





The original Broken Sword – arguably Revolution's most popular title





The sequel to Broken Sword was developed during a tight one-year schedule

narrative-based games. We'll simply tap into the code base of one of the super developers and avoid the whole technology problem. We think this model is about to arrive, and harbours many opportunities for smaller companies. The era of middle-sized developers writing engines and games is truly over, but maybe creativity will make a return. People who resist these changes are going to face a lot of pain, I think.

RG: Talk on the Revolution Web forum has mentioned 'online distribution' and 'episodic adventures'. Can you tell us more about this?

TW: Many players clearly love the old-style 2D adventures, but not enough to make these games a full-price retail reality – just look at the game charts… If a way can be found to reach these players without incurring the problems associated with traditional publishing, where niche genres simply don't work, then I think it's worth pursuing. Certainly we'd love to do it. The theory is that by cutting out all the distribution costs then players will pay 50% less and developers earn 50% more. Suddenly the maths make sense again. We're looking at the emergence of some very credible online gaming portal companies as a healthy sign. If we can sell adventure content this way, then one way to reduce the financial risk is to sell smaller chunks of gameplay, for a lot less money. So imagine Broken Sword split into, say, half a dozen chunks – it's basically the TV series model.

RG: Beneath the Steel Sky 2 has been rumoured for a while now. Is this project currently in development? If so, what can you tell us about it?

TW: Yes indeed, it's one of the designs we're working on, and has had a promising response from publishers. I can't say much about it, but it won't be quite what you might be expecting from us!

RG: Can you tell us anything more?

TW: The problem is that it's all subject to change. I am half envisaging that we get our design signed, but we may have to map it onto a new concept. Today, I can't give a firm answer…

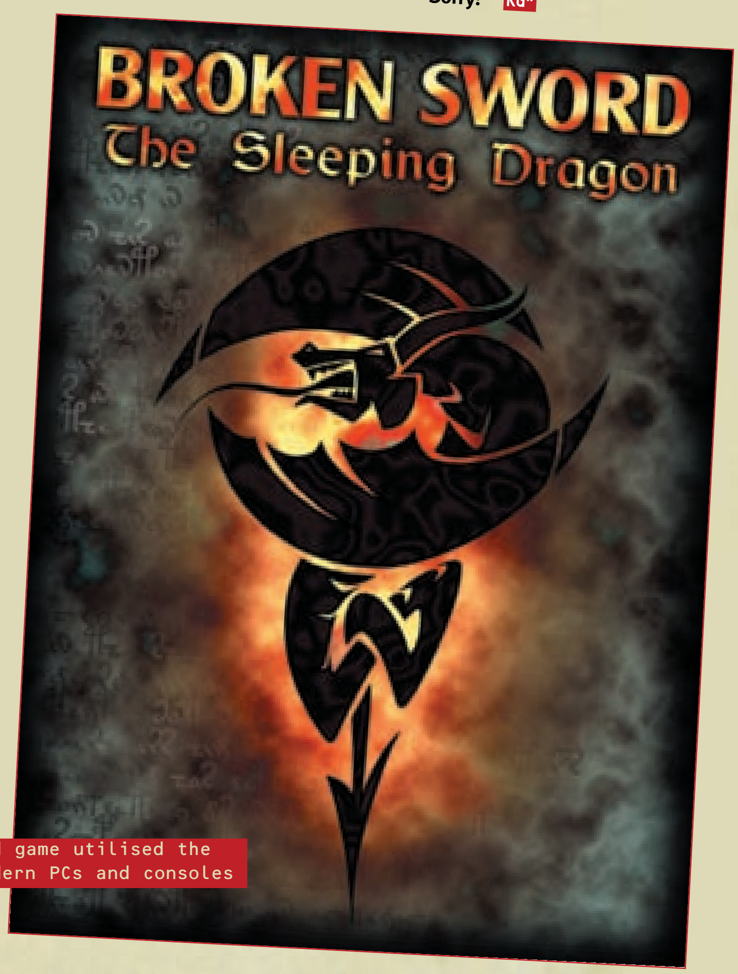
RG: Following your experiences with BS3, how do you see the future for story-driven adventure games?

TW: I see mainstream games using story and characterisation heavily, but BS3-style adventures will not feature in the retail market. Adventure games themselves could find their revival in the emerging online sector, with a little luck.

RG: Finally, we wondered if you had anything to say about Broken Sword's infamous 'goat' puzzle? It's surely the most devious puzzle ever!

TW: Sometimes it's best just to apologise and move on – so, "Sorry!" RG*





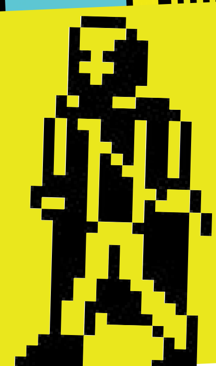
The third Broken Sword game utilised the graphical power of modern PCs and consoles

eMag





>Happy Daze



Remember Skool Daze and Back to Skool, Microsphere's classic scamp-em-ups? Author David Reidy promised a third game and claimed that clues to Eric's next adventure were hidden inside Back to Skool. Well we searched the school high and low, but found nothing. On numerous occasions since, we've also tried (and failed) to track down David Reidy and ask him what became of young Eric.

All is not lost, however, as a new independent game studio has recently released Skools Out, a PC update of Skool Daze with full 3D graphics. The studio's name is MuckyBaby Productions and the man behind it is Simon Keating, formerly of Argonaut Software and MuckyFoot Productions. We spoke to Simon about Skools Out and the plans for his new venture





MuckyBaby founder and Skools Out author Simon Keating



Retro Gamer: Why did you decide to bring back Skool Daze in 3D?

Simon Keating: I basically thought that some of our old classic genres were being left behind and needed to be brought up to date. I used to love Skool Daze as a kid and wanted to see a more updated version. I think that although many genres have had a gradual evolution over time, this kind of genre suddenly stopped moving somewhere down the line.

RG: How much influence did the original games have on you when you were coming up with the new title?

SK: Obviously there is a lot of influence, but at the same time I've mixed in elements of newer games, such as GTA and Urban Chaos, to include a varied, open-ended mission structure. There are also plenty of sub-games, as well as the obvious switch to 3D.

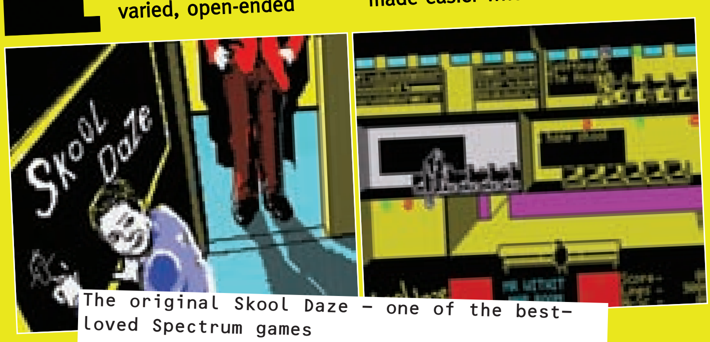


RG: Talking of Urban Chaos, the game engine bears a close resemblance to this title. Is there any reason for this or did you start from scratch?

SK: I'm pleased that you think the engine resembles Urban Chaos, but I used a commercially available engine instead to save time.

RG: You've included a huge number of questions that will be used in lessons within the game. Is Skools Out a bona fide learning experience?

SK: I've had a play with these so-called educational games and some are pretty good, but I think most people want to play first and be educated second (well, gamers do anyway.) I think that the whole process of learning is made easier when it's made fun.



The original Skool Daze – one of the best-loved Spectrum games



The sequel, Back to Skool, introduced bikes, frogs and girls

Unlike other educational titles, which try to cover up their obviously plain educational properties, in Skools Out the classes are perfectly entwined into the whole experience, as attending lessons effectively enables the player to survive longer within the game without getting thrown out of school. Having said that, it's purely up to the player if he or she wants to go to a geography lesson or not – as long as they can avoid the teachers, that is.



The game begins quietly enough, in the relative comfort of your own home

RG: Any plans to include writing on the blackboards or skipping class in the finished version?

SK: Skipping class is a must as everyone knows. There are indeed plans to have writing on blackboards and we might even let the player draw on them too.

RG: You plan to release the game as a budget-only title. Do you see a clear future in the budget-only market or will you eventually re-enter the full-price gaming world?

SK: I do see a big future for the budget market, especially for low-end PCs. I have a pretty naff PC and I just can't play any decent new games on it because they run really slowly. I'm sure there must be more people with older PCs than people with new PCs and they are our main audience.

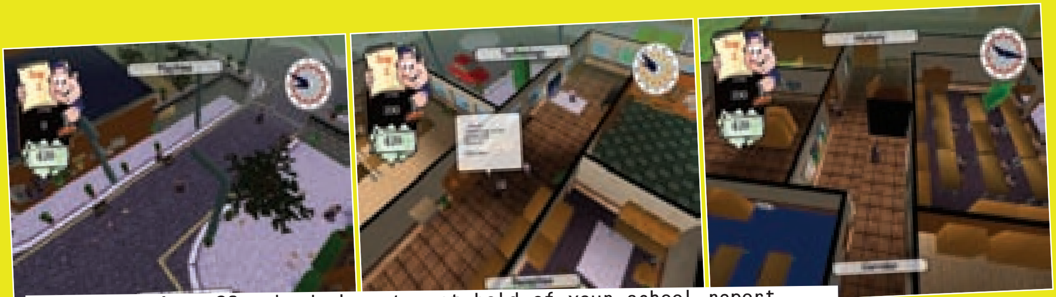
RG: How many team members have joined you from MuckyFoot?

SK: Just one other ex-Muckyfooter is helping me out with testing and QA. Everyone else got employed in all four corners of the globe.

RG: You're funding the development of Skools Out through donations – putting people's names on the credits. Do you think this novel idea will catch on with other development teams?

SK: I hope so. I think it's a great idea if I do say so myself, and thus it shall be known as the Keating Contribution method. But seriously, like most ideas it comes from a need… and that need is that we do not receive

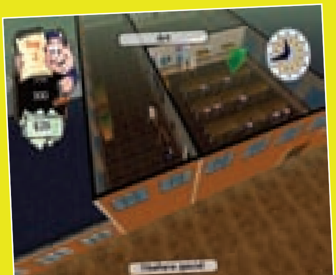




You've got just 20 school days to get hold of your school report before your parents see it!

any money for development unlike other teams, who get zillions. We must do what we can to enable us to continue.

RG: Are you going to stick to the PC side of things or will you eventually venture onto consoles?



There are loads of lessons to attend and over 1,000 questions to answer. You can skip class of course though

SK: I'd love to get back to the consoles, but our future firmly rests on our customers' decisions. We'll have to see where they take us.

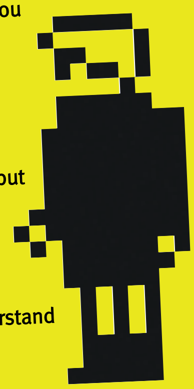
RG: Have you always been into games? What's your gaming history?

SK: I've always loved games. They have been my life forever really. From designing and playing role-playing games when I was about 10 up 'til now. I got a job in the industry 10 years ago and I still love 'em. It's just that you get sick of working on a title that takes over three years sometimes. That's my only grudge.

RG: So what are your favourite games then?

SK: Skool Daze is ace, but games I played for days and weeks were things like Sensible Soccer and Target Renegade. I'm big on my driving games too and my all-time best-ever game has to be Grand Prix Legends.

RG: So what were your school days like? Were you a model pupil?



SK: I used to get told off all the time. I wasn't particularly bad but I was one of those 'must try harder' pupils. Those teachers just didn't understand me man. RG*

Mucky Stuff

There's a playable demo of Skools Out on this month's coverdisc, and if you like what you see, you can order the full game from www.muckybaby.com. The game is priced at £6.99 (US$12.85) and runs on Windows PCs. Online orders will be processed with 48 hours of receipt.

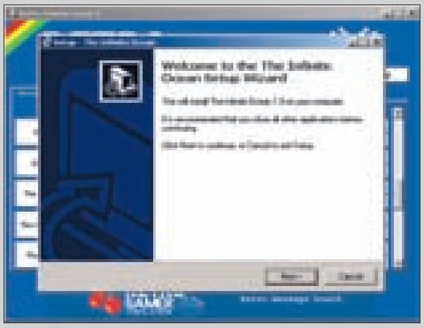
MuckyBaby Productions

Retro Gamer Coverdisc

Topping the bill this month is the full version of Revolution's point-and-click classic, Beneath a Steel Sky. The game will run on PCs and Macs, and full setup and playing instructions are provided on the opposite page. The coverdisc also contains a further 20 full games, plus playable demos, and you'll find our selection of the best games over the page



step 1 Place the coverdisc into your CD/DVD drive and it should start automatically. If not, select Run from the Start menu and enter D:\browser.exe (assuming that D: is the letter of your CD/DVD drive). When the browser appears, click OK to accept the declaration.



step 2 Some programs are provided as .exe files and these will run or install straight from the disc. If the program chooses to install itself, simply follow the onscreen prompts and then wait while the files are copied to your hard drive.



step 3 Many programs are stored in .zip files, so you might need an archive manager like WinZip, which is under the Extras browser tab. Extract all the files from the .zip archive using the Extract feature and place them in an empty folder, then run the .exe file.



step 4 If you are looking for a particular program, click the Search button and enter a keyword. The browser program will search the disc and place all the relevant results under the left most browser tab. They can now be accessed directly from here.

Problem solving

If you're having a problem with a particular program on our coverdisc, please view the help file in the program for assistance. You might also consider visiting the website of the program author for further help. If this fails, please email: **techsupport@livepublishing.co.uk**.

If you are having problems with the CD, first check that it is not dirty or scratched. CDs can be cleaned by holding them under the cold water tap and gently rubbing the silver side with a tissue. Dry it carefully with another tissue.

If the disc still doesn't work, then it may be faulty. Faulty discs should be returned to Retro Gamer, Live Publishing International Ltd, Europa House, Adlington Park, Macclesfield, Cheshire, UK, SK10 4NP. We will replace all genuinely faulty discs.

Coverdisc helpline

01625 855051

techsupport@livepublishing.co.uk

(Monday-Friday 10am-4pm)

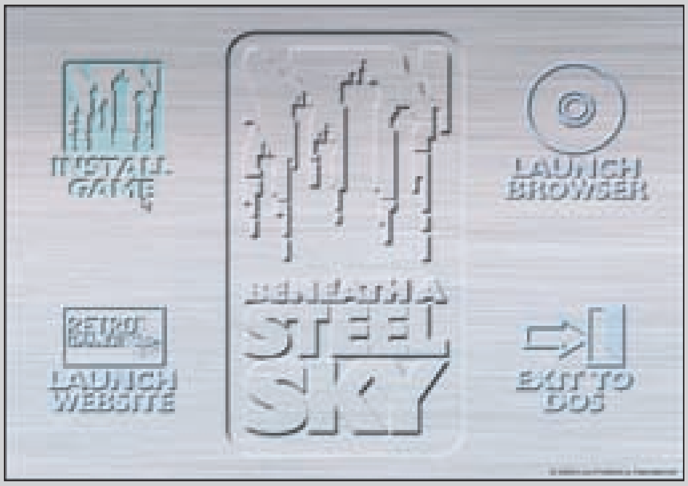
Helpline for coverdisc problems only

DISCLAIMER

Some of the programs on the Retro Gamer disc interact with your PC on a fundamental level. We strongly advise you back up your personal data before using the disc.

Due to the way the Retro Gamer disc is compiled, Retro Gamer, Live Publishing International Limited and/or any associated company and/or individual cannot take responsibility for damage to your PC or otherwise arising from use of the coverdisc. **You use the programs on the disc at your own risk.**

Playing Beneath a Steel Sky



step 1 PC users will be presented with this menu screen. Click the Install Game option and select a location to extract the files to (the Desktop is ideal). Click Unzip and wait for the files to be extracted, then run scummvm.exe.



PLEASE NOTE: The Mac version of Beneath a Steel Sky is designed to run under OS X (10.2 and 10.3). All other coverdisc contents are for PC only.

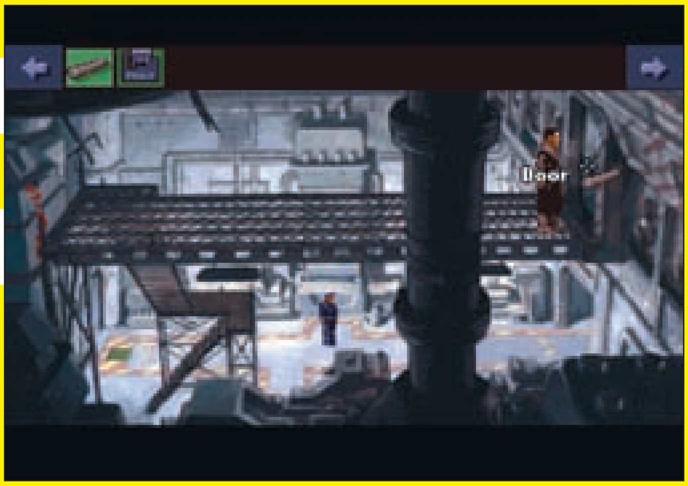
step 2 If you're using a Mac, double-click on the Retro Gamer CD icon and the disk contents will be displayed in a window. You can either run ScummVM straight from the disk, or copy the disk contents to your hard drive and run it from there.



step 3 Both PC and Mac users will now see the ScummVM menu screen. The first thing you need to do is browse to the folder containing both the ScummVM and Steel Sky files. Select Add Game, then browse to the folder and click Choose. Click OK to confirm.



step 4 Beneath a Steel Sky will now appear in the ScummVM menu. Highlight the game and click the Start button to begin. By default, the game will run in a window but you can toggle between windowed and full screen mode by pressing Alt + Enter.



step 5 You can move your character by pointing at a location and pressing the (left) mouse button. To use an item, go to the top of the screen and right-click on it (Cmd-Click on Macs). Now drag the item to where you want to use it.



step 6 Press F5 to access the in-game options. Here you can change sound and text settings, save and load your position, and quit the game. By default, your saved game files will be stored in the same folder as the game itself.

Adventureland

Besides Beneath a Steel Sky, there are over 20 other adventure games on this month's coverdisc. Not sure where to start? Let us show you the way

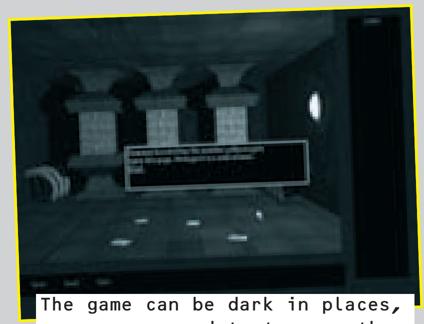


The Infinite Ocean

The problem with the majority of adventure games is that they can take days or even weeks to complete. Many of us simply don't have enough time to devote to a single game. The Infinite Ocean, though, can be completed in less than an hour. And what an hour it is…

The game was written by Jonas Kyratzes and is the follow-up to his acclaimed Last Rose in a Desert Garden (also on the coverdisc). Like Last Rose, The Infinite Ocean is downright dystopian, taking place in a post-apocalyptic hell. You begin in some kind of military base and your only hope of escape is by using the various computer terminals.

For a small, freeware adventure The Infinite Ocean packs a considerable punch. It's well written and the haunting music will send the odd shiver down your spine. Turn the lights down, hike the volume up and fall into this brief but brilliant adventure.



The game can be dark in places, so you may need to turn up the brightness on your monitor



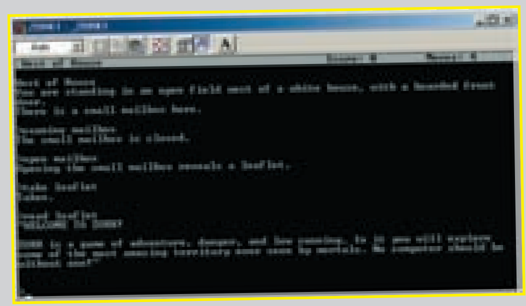
Flight of the Amazon Queen

You've got to hand it to the guys behind ScummVM. Besides continually improving their emulator and adding support for more and more adventure games (the latest version now runs the first two Broken Sword games), they also find the time to badger publishers and get them to release their old games as freeware. And that's exactly what's happened here. Amazon Queen was commercially released on PC and Amiga back in 1995 and now it can be freely distributed.

If you aren't familiar with the game then you're in for a treat. Billed as an irreverent pastiche of 1940s' adventure serials, the game mixes adventure, puzzles and humour to great effect and even rivals the mighty LucasArts' efforts. The CD-ROM version is included on the coverdisc and features full speech. The ScummVM emulator is required and you can set it up by following the Beneath a Steel Sky instructions.



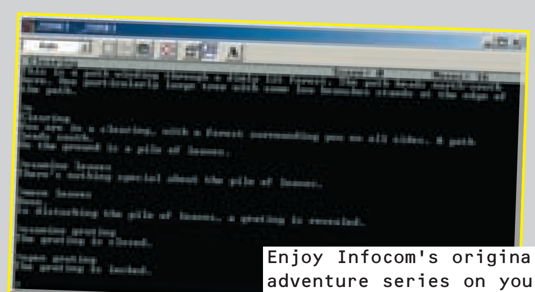
The game features over 100 locations and there are 40 different characters to interact with



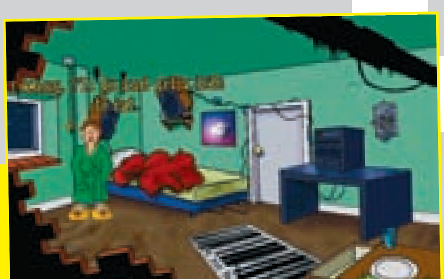
Zork Trilogy

Level 9 is a prominent feature of this issue, but if we're talking about adventure houses, then Infocom must get a mention. And if we went right back to the beginning, we'd find the original Zork Trilogy. The three games, all pure text adventures with no graphics, take place in an ancient empire that lies deep underground. Your aim is locate priceless treasures, but there are many deadly creatures and difficult puzzles that block your way. If you're new to text adventures, the original Zork is an ideal place to find your feet. Be warned though that the two sequels (Zork III in particular) can be very tricky indeed.

Each game is provided as a self-extracting archive, so make sure you put a folder name in the path, otherwise the unzipped files will spill out onto your desktop. To start the games you need to run the .BAT file. The adventure will then run in a window.



Enjoy Infocom's original adventure series on your Windows PC



Enter the strange world of Hurford Schlitzing. You'll like this guy

Out of Order

If you're a fan of point-and-click adventures and are disappointed that this particular sub-genre has died out in recent years, then Out of Order is a title for you to treasure. You play Hurford Schlitzing, one of life's eternal optimists. Hurford wakes up in the middle of the night to hear a storm crashing outside his bedroom window, and from then on things start to get very weird.

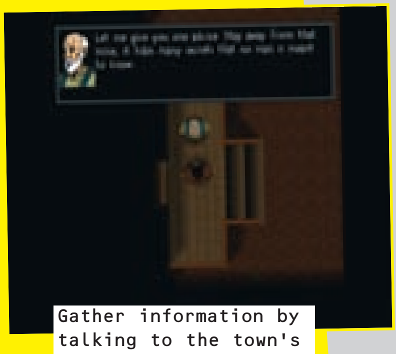
Out of Order is a fine homage to the point-and-click games of the early 90s. Humour abounds, and there are plenty of tricky puzzles that will keep you playing long into the night. In fact, you could play through the night because the completion time is estimated to be between 12 and 15 hours. So what are you waiting for?



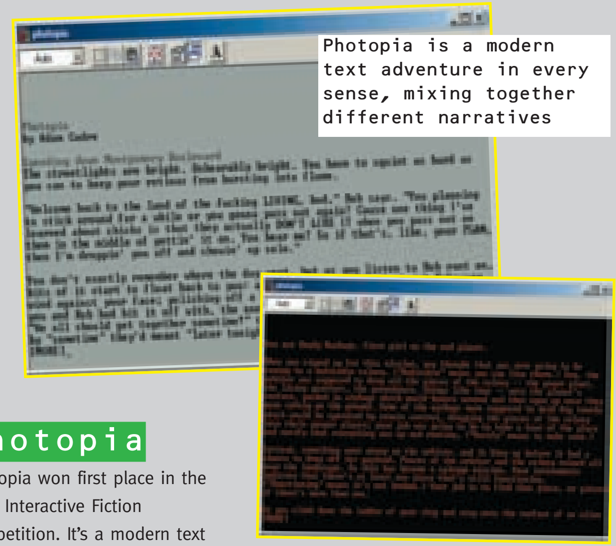
Fiend

Fiend is an interactive adventure heavily inspired by the work of HP Lovecraft. Rather than being a direct adaptation of one of his short stories, the game employs many of his usual themes and plot techniques to draw you in. The year is 1928 and you play mineral-expert Nick Cane, who has arrived in a rural New England township to investigate an abandoned mine. The owner believes that valuable minerals are located there but you soon discover that the mine harbours something much more unpleasant.

The action is viewed from a top-down perspective and the 2D game engine produces some impressive visual effects, including lightning flashes and falling rain. Ambient sound effects are also used to infuse this tale of terror with a degree of atmosphere. It's no Resident Evil or Alone in the Dark, but Fiend is a very playable and enjoyable alternative.



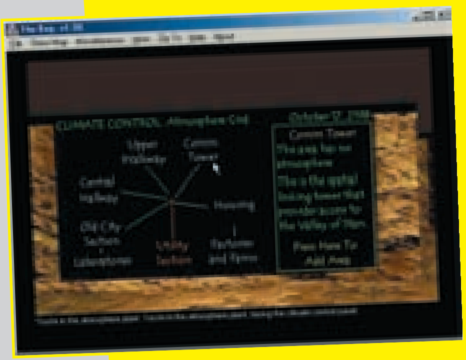
Gather information by talking to the town's locals inhabitants



Photopia is a modern text adventure in every sense, mixing together different narratives

Photopia

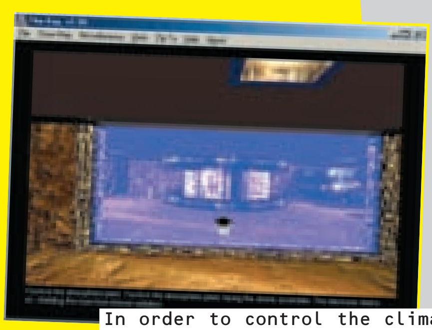
Photopia won first place in the 1998 Interactive Fiction Competition. It's a modern text adventure game that serves up three seemingly unconnected stories – two guys driving home from a party, a child astronaut's adventures on an alien world and a near-drowning at a swimming pool – and then carefully ties the threads together into a painfully precise knot. The result is an extremely clever and engrossing game.



The Key

This fantastic adventure game will appeal to fans of the classic Myst and Riven PC games. Using still images to depict locations rather than animated 3D visuals, and featuring a Myst-style interface, the game places the player inside an abandoned space station on the planet Arcadia. Your mission is to find a key that will save your home planet from attack. Your first task though, is to power up the station and find a way to access The Valley of the Stars. Standing in your way is a series of taxing puzzles. As with many classic adventure games, it really pays to make a map and write down each and every clue you find, no matter how trivial.

We've included all three parts of The Key on the coverdisc. When you've completed part 1, simply unzip part 2's files into the same folder. Now when you reach the Arcadia Comm Tower, you'll be able to progress to the Valley of the Stars. Do the same when you reach part 3 and you can complete your quest for the fabled key.



In order to control the climate in the base you must first power up the atmosphere plant



The graphics may now be in 3D, but the locations are all familiar

RealMYST

With the highly anticipated release of Myst 4 approaching, we thought it was an appropriate time to run a demo of the original game. But before you wonder why we're offering you a demo of a 10-year-old game, let us explain that realMYST is a remake of the original game. Instead of the static, slideshow approach, the original developers have turned the game into a fully 3D adventure. The locations and puzzles are the same, but the game is now much more immersive (and far prettier).

The demo takes place in the Stoneship age. If you've never played the game before, then the following hints will help you along. At the start of the game, turn right and head towards the control panel beneath the umbrella. Press the button on the right, turn around and enter the lighthouse. Go down the steps and turn the tap on the chest. Turn the tap again and return to the control panel. Press the middle button and re-enter the lighthouse. Open the risen chest with the key and then unlock the trapdoor. You're on your own from now on!

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SINCLAIR FOR SALE

Sealed original game Bubbler for sale – Highest offer accepted after 24 hours. Email me for pictures at delvin@newstaram.com

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ZX Spectrum Cartridge ROMs for sale – In mint condition. All 10 for sale. Email me for more details at delvin@nildram.co.uk

COMMODORE FOR SALE

Commodore 64 SCART cable – 2m, high quality, fits C64, C128, SX-64, VIC 20, plus/4, etc. £8 +£1 postage. PayPal or Nochex accepted. Phone 07713 630087 or email jp.hayward@virgin.net

Commodore 64 with data cassette – Four game cartridges and eight tape games, all boxed and in good condition. £30 or will swap for Sega Mega CD II. Email mr_superstar@mail.com or telephone 07817 990520

C64 Reference manual – Comprehensive hardback with dust cover. In very good condition. The book has sound, video, machine language and disk chapters. £15 including postage from Australia. Email Stevenaaus@netscape.net for further information.

34 boxed Amiga games for sale – Please email me for the full list. £30 including postage within the UK. Email mstigands@aol.com

COMMODORE WANTED

Commodore 64 tape deck wanted – Willing to pay up to £10-15 for a working unit in good condition. Email mortalkombat1978 @hotmail.com

I have a working Amiga CD32 with no software – I will swap for an Amiga A1200 or will buy CD32 software offered. Email deefrag_godlike@yahoo.com or telephone 0796 9511982

Accessories for C286-LT (old Commodore Laptop) and/or "Web-It" – English version manuals, power supplies and anything else considered. Contact me at leewcr@yahoo.co.uk

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ATARI FOR SALE

Atari 8-bit SCART cable – 2m, high quality, fits 800, 600XL, 800XL, 65XE, 130XE etc. £8 + £1 postage. PayPal or Nochex accepted. Phone 07713 630087 or email jp.hayward@virgin.net

I am in Australia... – and have access to a heap of retro gear that is hard to find at low prices. Email bloopoid@yahoo.com for further information

NINTENDO FOR SALE

Two Game & Watch (dual screen) – Donkey Kong II and Mario Bros, both in excellent condition. £30 each. Email pfrewer@hotmail.com or phone 07855 303960 (please leave a message if there is no reply)

SNES Console – With all leads and connections, two controls & FIFA International Soccer cartridge – £30. Email retrogamer43@aol.com or telephone 017687 75116

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Megadrive II – With all leads and connectors, two controllers & FIFA 96 (boxed) – £25. Email retrogamer43@aol.com or telephone 017687 75116

Megadrive – With all leads and connectors, two controls & PGA Tour Golf (boxed) – £25. Email retrogamer43@aol.com or telephone 017687 75116

Alien Soldier – Japanese original in mint condition. Treasure's last Megadrive title. Email me for pics. PayPal welcome. £100 ono, free recorded delivery, happy hunting! Email darkson1@btnternet.com

Jordan F1 Buzzin & Hornets steering wheel and pedals for the Dreamcast – UK version, boxed with instructions, very good condition. £4 + P&P. Email me for photo and information at garethcrowley@amiga.e7even.com

Megadrive II (no aerial lead) £8, 2 x Sega Mastersystem II kits £8 each, 44 boxed games £1.50-£2 each, 9 unboxed games £1 each, Dreamcast kit £35 including games. 01865 775556

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Tetris by Dr Pepper for the Megadrive – Japanese version, boxed, in good condition. £15 + P&P. Email me for photo and information at garethcrowley@ amiga.e7even.com

Flashback for the Megadrive – UK version, boxed with instructions, in good condition. £3 + P&P. Email me for photo and information at garethcrowley @amiga.e7even.com

Fatal Fury for Megadrive – Boxed but no instructions. £10 ono. Telephone between 1pm and 10pm all week on 07731 442321

SEGA WANTED

Wanted! Sonic on Mega CD – Good price paid. Email saturnman@emailservice.com

OTHER FOR SALE

High-quality Dragon 32/64 2m SCART cable for sale – £8 + £1 postage. Phone 07713 630087 or email jp.hayward@virgin.net

NeoGeo AES, unboxed – Plus one original NeoGeo Joystick (black) with Riding Hero and Samurai Spirits 2 (both in excellent condition). Email mattmagoo@hotmail.com for details

Apollo 13 (for the R-Zone) – UK version, boxed with instructions, like new. £1.50 + P&P. Email me for photo at garethcrowley@amiga.e7even.com

Fade To Black (for the PSone) – UK version, boxed with instructions, pretty good condition. £3 + P&P. Email me for photo at garethcrowley@amiga.e7even.com

Retro Gamer issue one for sale – Offers please. Text Paula on 07817 123640

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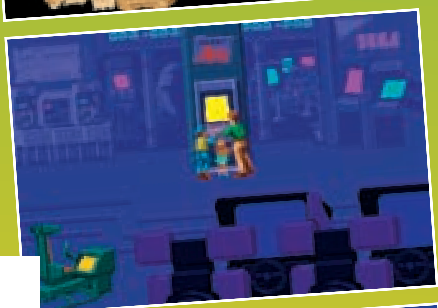
Serious collector – Looking for strategy, war games, RPGs, adventures and early 80s' stuff! Please mail me your list to peo@4e71.org

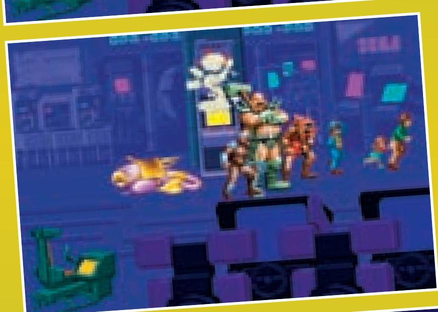
Imagine TV documentary circa 1985 – Apparently part of Commercial Breaks series. Willing to pay for tape and postage. Email me at robert@jabba.demon.co.uk

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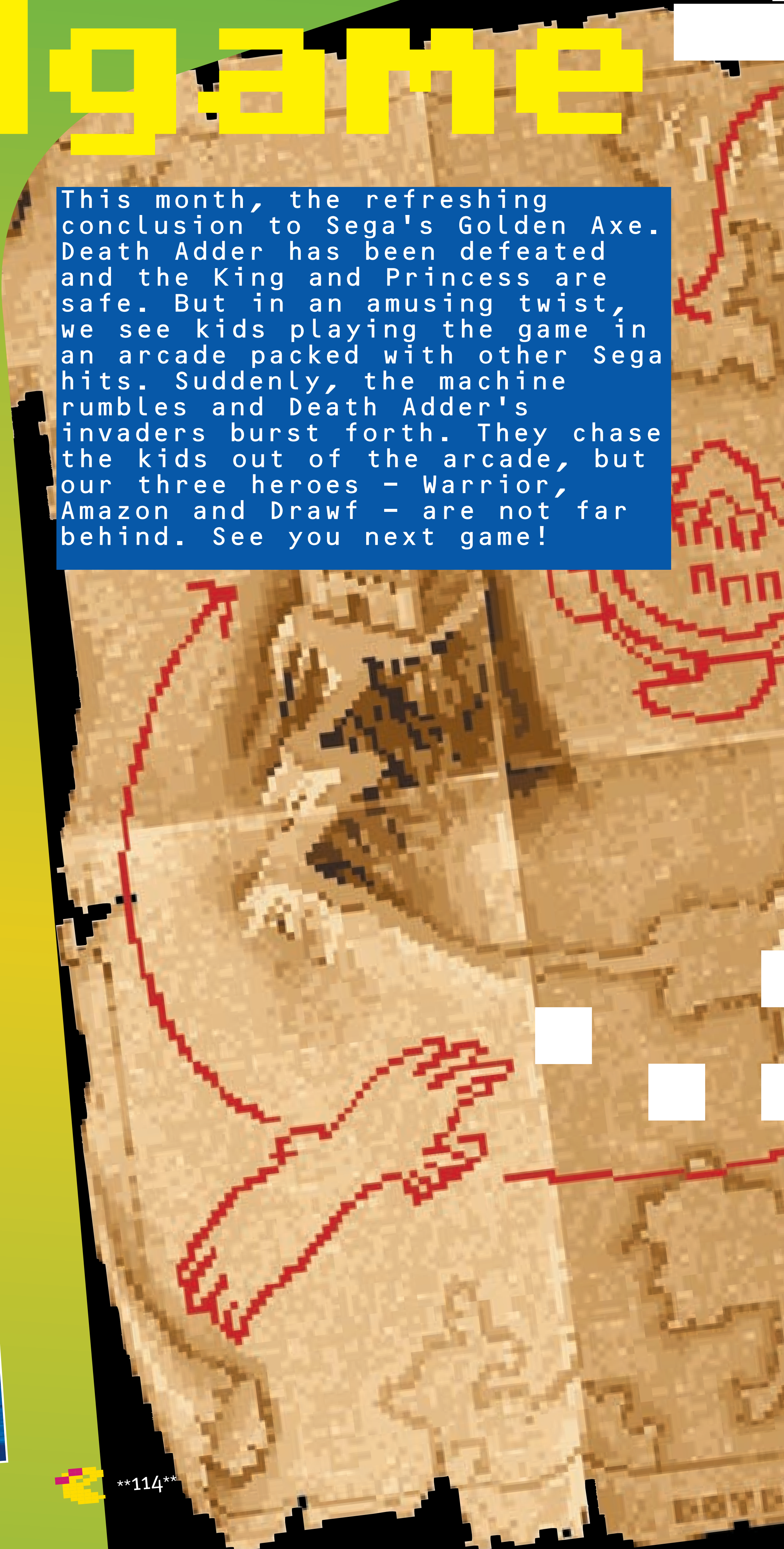

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when the pixel was king
ISSUE 7 HITS THE SHELVES
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CRAMMED WITH QUALITY RETRO CONTENT
RETRO GAMER
BENEATH A STEEL SKY
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Endgame







This month, the refreshing conclusion to Sega's Golden Axe. Death Adder has been defeated and the King and Princess are safe. But in an amusing twist, we see kids playing the game in an arcade packed with other Sega hits. Suddenly, the machine rumbles and Death Adder's invaders burst forth. They chase the kids out of the arcade, but our three heroes – Warrior, Amazon and Drawf – are not far behind. See you next game!